

**89-1510**

No.

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IN THE  
**Supreme Court of the United States**

October Term, 1989

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CAROL ANNE KLEEMANN, *et al.*,

*Petitioners,*

v.

McDONNELL DOUGLAS CORPORATION,

*Respondent.*

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**ON WRIT OF CERTIORARI  
TO THE UNITED STATES COURT OF APPEALS  
FOR THE FOURTH CIRCUIT**

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**PETITION FOR WRIT OF CERTIORARI**

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Robert S. Cooper, Jr.  
LAW OFFICES OF  
ROBERT S. COOPER, JR.  
Woodstock, Route 14  
Post Office Box 190  
Port Haywood, Virginia 23138  
(804) 725-9207 / 725-3937

*Counsel for Petitioners*



## I.

### QUESTIONS PRESENTED FOR REVIEW

1. Is a design defect in military equipment, resulting solely from contractor negligence, thereby concealed from the Government, rejected when discovered, subject to the *Boyle* government contractor defense?
2. Is conflict between the application of state law and the significant government interest or policy as defined in *Boyle* a prerequisite to the application of the government contractor defense?
3. Did the Court of Appeals err in defining the first two elements of the *Boyle* defense, thereby finding Navy approval and product conformity when approval is legally precluded and the design feature in question was condemned by the Navy for non-conformity?
4. Does the *Boyle* government contractor defense, when raised by Motion for Summary Judgment require that Plaintiff prove non-conformity to the government approved specifications?
5. Did the Fourth Circuit err in disregarding mandatory statutory and binding authority in its affirmance of summary judgment pursuant to F.R.C.P. 56?

## II.

### LIST OF PARTIES

#### Petitioners/Appellants/Cross-Appellees/Plaintiffs

- \* CAROL ANNE KLEEMANN, As Surviving Spouse of Captain HENRY M. KLEEMANN and Personal Representative of His Estate
- \* KATHERINE M. KLEEMANN, Minor Child of Captain and Mrs. Kleemann
- \* MICHAEL ANDREW KLEEMANN, Minor Child of Captain and Mrs. Kleemann
- \* SUSAN E. SEIDEN, Major Child of Mrs. Kleemann and Step-Child of Captain Kleemann
- \* STEVEN S. S. SEIDEN, JR., Major Child of Mrs. Kleemann and Step-Child of Captain Kleemann

#### Respondent/Appellee/Cross-Appellant/Defendant

- \* McDONNELL DOUGLAS CORPORATION



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## OPINIONS BELOW

The opinion of the United States Court of Appeals for the Fourth Circuit is reported at 890 F.2d 698 (4th Cir. 1989) and is reproduced in Appendix A.

The opinion of the United States District Court for the District of Maryland is unreported and is reproduced in Appendix B.

The Magistrate's Report and Recommendation is unreported and is reproduced in Appendix C.

The Fourth Circuit's denial of panel rehearing and rehearing *en banc* is unreported and is reproduced in Appendix D.

The judgment of the District Court is reproduced in Appendix E.

## STATEMENT OF JURISDICTION

This Court has Certiorari jurisdiction pursuant to 28 U.S.C. 1254 (1). The judgment of the Fourth Circuit Court of Appeals was entered on December 6, 1989.

Plaintiffs' Petition for Rehearing with a Suggestion for Rehearing *en banc*, was denied December 29, 1989. This petition was filed within ninety days thereof.

## CONSTITUTIONAL PROVISIONS AND STATUTES INVOLVED

This case involves the "discretionary function exception" to the Federal Tort Claims Act, 28 U.S.C. §2860(a); Article I, Section 1, United States Constitution; the Seventh Amendment Right to Trial by Jury; United States Constitution Amendment VII; and Rules 56(c) and (e) of the Federal Rules of Civil Procedure. The full texts of these provisions are reproduced in Appendix F.

## STATEMENT OF THE CASE

On December 3, 1985, United States Navy Captain Henry M. Kleemann was killed when the F/A-18 aircraft he was landing went out of control, departed the runway and overturned. (337).<sup>1</sup> The Navy concluded that the accident was primarily caused by a failure of the aircraft's right main landing gear planing link assembly. (267).

The McDonnell Douglas Corporation ("MDC") participated in the design of the Navy's F/A-18 aircraft. After deciding on the type or style of landing gear required (390), MDC selected a subcontractor, Cleveland Pneumatics Corporation ("C.P.C."), to design and manufacture it. (221).

C.P.C.'s design of the landing gear incorporated a planing assembly comprised basically of a planing link and axle lock linkages. (491-493).

The planing link, through lock links, controls alignment of the aircraft's main wheels. When locked, the wheels are aligned or "planed" in the same direction as the aircraft. When unlocked the wheels "deplane" or move out of that alignment. Deplaning should occur only during gear retraction. (491-493).

Contrary to the panel's finding, there is no evidence that the Navy or anyone else participated in the design of the planing link (415-416); or that the Navy evaluated C.P.C.'s relevant design choices prior to 1986-1987. (513-515).

Following the accident, and several intervening incidents, a specially appointed team of MDC engineers (584) discovered a serious flaw in C.P.C.'s design of the planing link. (552-556; 562-563). Reduced to basics, C.P.C. failed to properly identify the loads that the planing link would be subjected to during certain type landings. (541-563). This resulted in an inadequate structural design of the planing link.<sup>2</sup> Redesign was recommended. (563-564).

It was this design deficiency that caused the planing link failure on the accident aircraft which permitted the right main

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<sup>1</sup> Numbers in parentheses are references to the joint appendix utilized in the Court of Appeals

<sup>2</sup> The deficiency was too little cartridge stroke, which permits the planing link to unlock the axle lock links when it should keep them locked. (574-577).

landing gear wheel to move abruptly out of proper alignment while the aircraft was landing on a wet runway, with resultant loss of control and runway departure. (287-290; 344-351; 543; 553-554; 562).

Meanwhile the Navy, apparently unaware of MDC's finding, conducted its own engineering investigation. (307-311). Based thereon the Navy determined that the F/A-18's main landing gear planing link and associated lock linkages were simply too weak to withstand normal landing loads (260-261, 307-311), and that this violated the Navy's contractually imposed design specifications with regard to service life. (260-261). It also violates strength, deformation, deflection and other contractually imposed Navy design requirements. (346-350).

On September 18, 1987, the Navy formally demanded redesign, production incorporation, and fleetwide retrofit at no increase in contract price. (260-261). MDC accordingly redesigned the planing link, agreed to production incorporation (399), but balked at the Navy's redesign classification and the extent of retrofit demanded by the Navy on contractual grounds. (397).

Captain Kleemann's family then filed suit in the United States District Court for the District of Maryland against MDC claiming that the aircraft was negligently designed and tested, that as delivered it was defective, and that Defendant had breached express and implied warranties of fitness arising out of its Navy contract upon which Decedent was entitled to rely. Jurisdiction was based on 28 U.S.C. 1332 (1976).

While expert discovery was ongoing, Defendant filed a motion for summary judgment based on the government contractor defense enunciated by this Court in *Boyle v. United Technologies Corporation*, 108 S.Ct. 2510 (1988). (36-37; 38-63).

Plaintiffs responded, denying that MDC was entitled to invoke the defense because it had breached its contract in that the design of the planing link did not conform to the Navy approved specifications. (72-105). Plaintiffs moved by way of cross-motion for a judgment on the issue of the inapplicability of the defense to this case. (106).

In its response MDC contended that all it was required to do was deliver the aircraft with all the "mechanisms" shown on the specifications. (109).

The United States Magistrate recommended that the Defendant's motion be granted. (Appendix C-8). On appeal, the District Court adopted the Magistrate's report in full and dismissed Plaintiffs' suit. (Appendices B-1,4 & E-1).

Plaintiffs appealed to the Fourth Circuit alleging the full panoply of errors in the District Court's decision.

The Fourth Circuit Court of Appeals affirmed the decision of the District Court. The panel, reduced to two by the death of Judge C. F. Haynesworth, Senior Circuit Judge, rejected Plaintiffs' contention that this case falls outside the ambit of the defense because the "nature of the product" and "characteristics of the design process" determine applicability. (Appendix A-4).

The panel rejected Plaintiffs' contention that the Navy itself determined the planing link violated the Navy's design specifications by holding that Plaintiffs relied on an earlier 1983/1984 Notice of Defect ("NOD") which was closed out by the Navy in May of 1985<sup>3</sup>

The panel improperly found Navy approval by participation and review, limited the reasonably precise specifications to the "working drawings", defined conformity as the absence of deviations in configuration, i.e. mismanufacture, and found no record evidence of non-conformity as defined by it.

A petition for rehearing with suggestion for rehearing *en banc* was filed December 20, 1989, and denied December 29, 1989.

## REASONS FOR GRANTING THE WRIT

### 1.

#### THE IMPORTANCE OF THE ISSUES PRESENTED

The importance of the issues presented herein cannot be overstated.

The panel's decision presents issues of extraordinary national importance.

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<sup>3</sup> This is, of course, incorrect. Plaintiffs do not rely on the 1983/1984 Notices of Defect. Plaintiffs rely on a Navy "Request for Corrective Action" dated September 18, 1987. MDC redesigned the planing link as a result of this "Request for Corrective Action". The Request is still open because of disagreement over the classification of the redesign and the extent of MDC's retrofit liability. (402). A copy of the 1987 Request is attached as Appendix G.

They run the gamut from federalism, to separation of powers, to the liability of government contractors, to the infringement of the right to trial by jury through improper use of summary judgment procedure.

First, in finding the defense applicable to a situation devoid of federal interest, the opinion presents issues inherently embodied in concepts of federalism, i.e. the interplay between state and federal law, essential to the proper functioning of the federal system. In *Boyle*, this Court struck a very careful balance between the interest protected by state and federal law by defining an indispensable prerequisite for application of this defense which, if respected, insured the balance would not be disturbed.

The panel, by substituting its own applicability standard, has swept this away, upsetting the balance between the competing federal and state interests therein struck.

*Boyle* was equally careful to ground the defense on a legal basis that, if followed, would not infringe upon the powers delegated to Congress in the Constitution. This is because *Boyle* itself is ultimately based on an act of Congress.

Under *Boyle*, when the case falls within the defined scope of the defense and the limiting criteria are satisfied, the contractor is entitled to immunity to the extent that the United States would be immune under the "discretionary function exception" of the Federal Tort Claims Act ("FTCA") 28 U.S.C. 2860(a). No less, and assuredly no more. Where the discretionary function exception does not apply, the United States is subjected to liability under "the law of the place where the act or omission occurred". 28 U.S.C. 1346(b). The United States is not entitled to a further displacement of state law. *Richards v. United States*, 369 U.S. 1, 10-11 (1962). And, neither is a government contractor.

The panel's opinion, by focusing on its perception of governmental participation in the overall design and development process, rather than on the specific conduct involved with regard to the particular design feature in question, has extended a greater degree of immunity to a government contractor than is enjoyed by the United States. This involves not only a disregard of binding authority, see e.g. *Indian Towing Co. v. United States*, 350 U.S. 61 (1955), but also a frank invasion of the powers reserved to Congress in Article I, Section 1 of the Constitution of the United States.

Next the panel's decision, by misdefining the first two elements of the limiting criteria adopted in *Boyle*, thereby all but abolishing civil liability of government contractors for defectively or negligently designed military equipment, will have a profound national effect.

The decision below, if upheld, will bar the claim of every citizen who is killed or injured by a defectively or negligently designed product, designed and built under government contract, whether the existence of the defect was negligently concealed from the Government or not.

Next presented are issues concerning the proper definition and application of the elements of the defense.

Following the *Boyle* decision, many commentators were concerned by the number of issues left unresolved therein. See articles listed in *Nielson v. George Diamond Vogel Paint Co.*, 892 F.2d 1450, 1453 (9th Cir. 1990). Similar observations appear in the case law; see *Smith v. Xerox*, 866 F.2d 135, 137 (5th Cir. 1989); and *Trevino v. General Dynamics*, 865 F.2d 1474, 1479 (5th Cir. 1989), cert. denied 110 S.Ct. 1327 (1989); and as well appear in the Magistrate's report herein. (Appendix C-2).

Conflicts concerning the defense now abound in the Circuits. The Second, Fifth and Ninth are on one side and the Fourth on the other, with the Eleventh lining up with the Fifth on what are the relevant specifications but with the Fourth, in dicta, on conformity. On the facts presented there is no doubt that Petitioners would have prevailed in the Second, Fifth and Ninth Circuits, with the Eleventh being uncertain. There is also no doubt that, on the facts presented, *Trevino* would be summarily dismissed in the Fourth Circuit. This is an extremely undesirable situation which raises questions related to fundamental fairness in the administration of justice.

This case presents the opportunity for the Court to clarify the defense. It contains virtually every issue left unresolved in *Boyle* and every issue on which the Circuits presently disagree.

Finally, the panel's decision in disregarding mandatory statutory and binding judicial authority with regard to summary judgment, in effect for decades, with regard to summary judgment also raises issues of national importance. Since this Court's trilogy



of 1986 decisions<sup>4</sup> involving summary judgment, its use has risen substantially, *Williams v. Borough of West Chester, Pa.*, 891 F.2d 458, 459 (3rd Cir. 1990). No reported decision has reduced a mover's burden of proof as low as here. "Evidence", which would not justify submission of the issue to a jury, has become sufficient for summary judgment. If unrectified this decision will open the door to abuses and frauds on the courts thereby posing a significant danger to the right of trial by jury.

And, now to the specifics.

## 2.

### **THE PANEL'S EXTENSION OF THE GOVERNMENT CONTRACTOR DEFENSE TO A DESIGN FEATURE SOLELY ATTRIBUTABLE TO CONTRACTOR FAULT OR NEGLIGENCE IS IN IRRECONCILABLE CONFLICT WITH *BOYLE V. U.T.C.*, 108 S.Ct. 2510 (1988), AND DECISIONS OF THE OTHER CIRCUITS**

Plaintiffs alleged the design feature in question resulted solely from contractor negligence (*see e.g.* Vol. 4 R. 83, p.3). This was based in large part on MDC's engineering investigation of the design. (539-583). The Court of Appeals was bound to accept the factual basis of Petitioners' contention. *Bishop v. Wood*, 426 U.S. 341, 347 (1976); *Arnett v. Kennedy*, 416 U.S. 134, 139-140 (1974).

Thus, the issue presented is whether or not the government contractor defense has any applicability to a design feature based solely on contractor negligence.

Analysis of the rationale and basis of the defense as stated by this Court in *Boyle* compels a negative answer. Not surprisingly, up until now, the Courts which considered the issue have responded in the negative. *See Trevino*, 865 F.2d at 1481 and *Bynum v. F.M.C. Corp.*, 770 F.2d at 574. (5th Cir. 1985).

The panel, in order to reach a contrary conclusion had to reject the criteria for application mandated by *Boyle*, which is now

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<sup>4</sup>. *Celotex Corp. v. Catrett*, 477 U.S. 317, 106 S.Ct. 354, 91 L.Ed.2d 265 (1986); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986); and, *Matsushita Elec. Indus. Co. v. Zenith Radio Co.*, 475 U.S. 574, 106 S.Ct. 1348, 89 L.Ed. 538 (1986).

explicitly followed by the Second, Fifth and Ninth Circuits,<sup>5</sup> and devise its own version of the defense which irreconcilably conflicts not only with *Boyle*, but with decisions of the other Circuits as well.

In so doing the panel applied the defense to a case where application of state law design duties will generate no conflict with the federal policy which underlies the defense, but rather is in perfect harmony with it. This is further illustrated by the fact that the panel's decision immunized a contractor whose product as designed breached the Government's contractually imposed design requirements. More ominously, the panel has immunized a government contractor where the Government itself would be liable to those entitled to bring suit under the Federal Tort Claims Act ("FTCA"), 28 U.S.C. §1346(b), had it designed the device in question on the same basis as C.P.C.

#### A. The Significant Conflict Analysis per *Boyle*

In *Boyle v. United Technologies Corp.*, 487 U.S. 500, 108 S.Ct. 2510, 101 L.Ed.2d 442 (1988), this Court recognized and established the government contractor defense. The Court, however, limited the defense to cases where a state tort law design duty poses a "significant conflict" with the duties imposed under a federal contract. See *Boyle* 108 S.Ct. 2515-2516. This Court found that the policies underlying the discretionary function exception to the FTCA, 28 U.S.C. §2680(a) (1982), supplied both the rationale for the defense and defined the nature of the requisite conflict. *Boyle*, 108 S.Ct. at 2517; *Eagle-Pitcher* at 3.

Application of the defense is thus limited by a mandatory requirement of conflict between the federal policy defined in *Boyle* and state tort law design duties. "But conflict there must be." *Boyle*, 108 S.Ct. at 2516; and 2517-2518.

Some situations are so lacking in conflict potential that a simple examination of the facts is sufficient to preclude application of the defense. See e.g. *Nielson*, 892 F.2d 1455 (application of the defense was reversed because of the absence of conflict potential,

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<sup>5</sup>. See *Joint Eastern and Southern District of New York Asbestos Litigation, etc., et al v. Eagle-Pitcher Industries, Inc.*, 1990 West Law 17927, \_\_\_ F.2d \_\_\_ (2nd Cir. 2-20-90), hereafter "*Eagle-Pitcher*", page references are to the West Law Opinion; *Trevino* 865 F.2d at 1481; and *Nielson*, 892 F.2d at 1454.



owing to civilian context presented).

Likewise, when the design feature in question results solely from contractor fault or negligence, no federal interest is implicated and the defense is inapplicable. *See Trevino*, 965 F.2d at 1484, 1486; *Bynum*, 770 F.2d 556, 574; *see also Nielson*, 892 F.2d at 1454.

This is even more obvious when, like here, the government rejects the design feature in question as being violative of the contractually imposed design requirements and is seeking to impose "millions of dollars" of retrofit liability on the contractor for the same design defect. (399-400).

Simply stated, the government has no interest in design features in military equipment resulting solely from contractor negligence.

Arguably, the government has an affirmative interest in seeing state tort law design duties applied to design features like this.

To suggest that application of state law to hold this design feature defective would create the requisite conflict with a significant federal interest or policy is unreasonable at best. The Navy formally condemned the design feature in question prior to the filing of this suit. (260-261).

The panel missed yet another obstacle to applicability.

This Court, in outlining the scope of the military contractor defense, prefaced its explanation by observing that it would not always displace state tort law, because state tort law does not inevitably conflict with design duties imposed upon military contractors in federal contracts. *Boyle*, 108 S.Ct. at 2516-2517; *see also Eagle-Pitcher* at 3.

In illustrating how the existence of the requisite conflict may be identified, this Court compared the state law design duty, with regard to the relevant design feature in question, with the design duty assumed by the contractor in that regard in its government contract. *Boyle* at 2516. When such duties are shown to be identical or compatible no federal interest is implicated and the defense is inapplicable. *Boyle* at 2516.

When they conflict, and the equipment is not stock or "off-the-shelf", if the conditions of the limiting criteria are established, the requisite conflict is present and the defense is applicable. *Boyle* at 2518.

Comparison of the respective legal and contractual duties likewise reveals that the defense is inapplicable to this case.

Succinctly put, MDC assumed the duty to deliver the aircraft equipped with a planing link so designed that it would withstand the motion encountered during landings such as Captain Kleemann's aircraft was making, without buckling, bending or unlocking. (479-480; 482-482). Because of its subcontractor's failure to properly identify the loads in this type landing, among others, MDC failed to do so (315; 415; 555; 582).

The contractual duties assumed by MDC with regard to the relevant aspect of the design of the planing link are compatible with the state law duty<sup>6</sup> to use reasonable care in the design of the landing gear.<sup>7</sup>

The state law duties with regard to defective design are also compatible with MDC's contractual duties. See *Barker v. Lull*, 20 Cal.3d 413, 422-423, 573 P.2d 445, 454-456, 143 Cal.Rptr. 225, 236-238 (Cal. Sup.Ct. 1978); and Plaintiffs' breach of warranty claims are based on MDC's breach of the warranty clause of the contract itself. *Peterson v. Lamb Rubber Co.*, 54 Cal.2d 339, 353 P.2d 575, 5 Cal.Rptr. 863, (1960).

A clearer example of the compatibility as well as identity of duties in the procurement of military equipment, exemplified by *Miree v. DeKalb County*, 443 U.S. 25, (1970), cited in *Boyle*, 108 S.Ct. at 2515-2516, would be hard to imagine.

Thus, no federal interest could possibly be implicated by application of state law to the design feature in question.

How did the appeals court miss this when it was raised, briefed and argued? Because the panel devised and used its own applicability standard. Applicability of the defense is not governed by conflict generated by the application of state law with a significant federal interest or policy, but rather by the "nature of the product" and the "characteristics of the design process." (See

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<sup>6</sup>. Maryland incorporates California substantive law in this case by statute. Md. Court and Jud. Proc. Ann. §3-903.

<sup>7</sup>. There are no more basic duties in structural design than to properly identify the loads the component will be subjected to during intended use and to design the component accordingly. See "Fundamentals of Aircraft Structures" Millard V. Barton, Univ. of Texas, Prentice Hall (1948) at Chap. 2, p.6 ¶2.1; "Analysis and Design of Flight Vehicle Structures", Bruhn, et al, Tri-State Offset Company (1965) at Cl.14 ("Required Strength of Flight Structures").

Appendix A-4). This standard is fraught with error. Utilization has resulted in displacement of state law in the absence of a conflict with any federal interest or policy, much less the significant policy defined in *Boyle*.

This decision also conflicts with decisions on point in the Second and Ninth Circuits. See *Eagle-Pitcher* at 2-3; and *Nielson* 892 F.2d at 1454.

In extending the defense to a design defect for which the contractor is solely responsible, it conflicts with the expressed intent of *Boyle*, as well as a post-*Boyle* decision on point in the Fifth Circuit. *Trevino* 865 F.2d at 1481; also see *Bynum v. F.M.C. Corp.*, 770 F.2d at 574.

The panel has displaced state law without legal justification raising serious questions involving federalism.

#### **B. The Panel Has Extended The Protection Of The Defense To A Contractor Whose Product Admittedly Breached The Government's Design Specifications**

Following this accident the Navy conducted an extensive investigation of the relevant design, condemned it, demanded and received redesign and production incorporation and is demanding fleetwide retrofit. (Appendix G; 396-402). MDC admitted C.P.C.'s design was deficient. (260-261; 397; 523).

The panel's misapprehension of this critical evidence is affirmatively reflected in its opinion.<sup>8</sup>

The panel first mischaracterized the Navy's formal legal determination that a contractor's product is defectively designed as "just an exchange of information." (Appendix A-9). It then viewed the evidence and somehow concluded that the Navy's 1987 determination was mooted because of the Navy's 1985 closure of 1983/1984 NOD's concerning a design defect in the hydraulic system. The panel noted that Captain Kleemann's plane had hydraulic restrictors installed which somehow seemed important. (Appendix A-10). Query: What does this have to do with the adequacy of the structural design of the planing link? Answer: Absolutely nothing. (354; 370-371; 387-388).

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<sup>8</sup>. See Footnote 3 at p.4.

The panel simply never addressed Plaintiffs' real contentions.

Further evidence of the panel's confusion is demonstrated by the fact that, after noting that one of the policies underpinning the defense was the need to protect government contractors from legal liability for doing the "government's bidding" (Appendix A-8), it extended the benefit thereof to a contractor which admittedly did not do the government's bidding. This is indeed puzzling.

However, what is clear is that this decision is bad law and even worse policy - - unless rectified by this Court, military contractors are now immune from civil liability for design defects arising from their breach of government contracts.

This seems a very unwise policy indeed.

**C. The Panel's Opinion Has Immunized A Contractor  
for A Design Defect For Which The Government Would  
Be Liable Had it Designed The Device In Question**

Had the government designed this device on the same basis as C.P.C., there is no doubt that it would be liable to anyone, otherwise entitled to sue,<sup>9</sup> damaged thereby. 28 U.S.C. §1346(b).

Thus the panel has immunized a contractor for acts that, if performed by the government, would suffice to impose liability on it. This exceeds the permissible scope of the defense defined in *Boyle*, conflicts with *Indian Towing Co.*, 350 U.S. at 69, and constitutes a frank invasion of the powers reserved to Congress in Article I, Section 1 of the Constitution raising serious issues of separation of powers. Where does the power to immunize MDC for acts for which the government would be liable come from?

The panel's opinion should be reviewed and the judgment thereafter reversed.

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<sup>9</sup>. While *Feres v. United States*, 340 U.S. 135, 71 S.Ct. 153, 95 L.Ed. 152 (1950), would bar the Kleemann family from suing the government, if civilian bystanders were injured in the accident they would undoubtedly be so entitled.

**THE FOURTH CIRCUIT'S DEFINITION AND APPLICATION OF THE FIRST TWO ELEMENTS OF THE *BOYLE* LIMITING CRITERIA ARE IN DIRECT CONFLICT WITH THIS COURT'S DECISION IN *BOYLE* AS WELL AS DECISIONS OF THE OTHER CIRCUITS**

The panel's opinion with regard to the scope of displacement fares no better. The Appeals Court found (1) Navy approval of the design defect when the Navy neither did, nor could, approve it as a matter of law; (2) limited the Navy approved specifications to the working drawings and (3) restricted non-conformity to configuration deviation, i.e. mismanufacture, thereby rendering the first two elements of the *Boyle* criteria meaningless. The panel then imposed the burden to prove non-conformity, as defined by it, on Plaintiffs.

**A. There Neither Was, Nor Could Be, *Boyle* Approval Of The Design Feature In Question By The Navy**

The panel *sua sponte* held that the Navy approved the design feature in question for the purposes of *Boyle*. (See Appendix A-6 at Note 2). This holding is now subject to review. *Church of Scientology of Cal. v. I.R.S.*, 484 U.S. 9 (1988); *Andrus v. Charlestone Stone Products Co.*, 436 U.S. 604, 609 (1978).

The design feature in question is insufficient cartridge stroke in the planing link. (573-576). It resulted solely from contractor negligence (415-416; 315; 555). Neither the contractor nor the Navy was aware of it prior to the accident. It did not result from any choice made by the Navy. Nor did it, contrary to the panel's finding, result from a trade-off of "greater safety" for "greater combat effectiveness." (Appendix A-5). It was unacceptable to the Navy. (260-261). What the Navy "got" for it was anathema - - an officer of unparalleled achievements, a national hero being groomed for entry into the highest levels of Navy command, dead of a broken neck in the mud at Miramar. (337).<sup>10</sup>

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<sup>10</sup>. See "Capt. Henry M. Kleemann, American Hero", Cong. Rec. December 10, 1985, E 5537-5538.



These facts constitute an absolute legal impediment to the panel's approval holding. *Boyle* approval "must constitute a discretionary function". *Trevino*, 865 F.2d at 1480; *Eagle-Pitcher* at 6.

A discretionary function is a judgment or decision of a public official involving an element of choice based on considerations of public policy. *Berkovitz v. United States*, 486 U.S. 531 (1988). It insulates the government from liability if, and only if, "the action challenged involves the permissible exercise of policy judgment." *Berkovitz* at 577. It does not cover the negligent discharge of a duty assumed as a result of the exercise of a discretionary decision. *Indian Towing Co.*, 350 U.S. at 69.

Approval of C.P.C.'s design could never involve a "permissible exercise of policy judgment" because of what it was based on.

Also, since the Navy would enjoy no immunity had it designed the planing link as did C.P.C., there is no governmental immunity to share with MDC. *Indian Towing Co.*, 350 U.S. at 69.

Overlooking these absolute legal impediments, the panel found "approval" in intimate Navy involvement "at various stages of the design and development process" and such like. (Appendix A-6). This is not the *Boyle* requirement. *Boyle* requires a discretionary judgment in favor of the design feature in question. Nothing less will suffice. *Trevino* 865 F.2d at 1480-1482; *Eagle-Pitcher* at 6.

"Intimate involvement" can no more supply approval when it is legally prohibited than "the nature of the product" can supply applicability in the absence of conflict.

Further, the panel missed the fact that approval is also precluded by the Navy's inability to evaluate C.P.C.'s relevant design choice. How could the Navy do so, when MDC's project engineers could not, even after they knew something was terribly wrong with it? (513-515). It took an elite team of MDC engineers, using a computer assisted design analysis with a special computer program, to finally discover the basis of C.P.C.'s design choice, improper loads analysis, in May of 1986! (517-583).

Since an inadequate or indifferent review is insufficient, a review which cannot reveal the defect is likewise insufficient. *Trevino*, 865 F.2d at 1481. A contrary rule would be farcical. *Trevino* at 1482.

There being no approval, the defense is inapplicable, Navy participation in design, continuous exchanges of information or extensive drawing review notwithstanding.<sup>11</sup>

### **B. The Court Of Appeals Erred In Restricting The "Reasonably Precise Specifications" To The Working Drawings**

All three lower courts unabashedly limited the "reasonably precise specifications" per *Boyle* to Type 1 specifications<sup>12</sup> derived in *Shaw v. Grumman Aerospace*, 778 F.2d 736 (11th Cir. 1988), cert. denied 108 S.Ct. 2896, 101 L.Ed. 980 (1988). (See Appendices A-7,8; B-2-3 & C-5-7).

The holding cannot withstand scrutiny.

It compels results which are illogical, unreasonable and unjust. It is without precedential support, is in irreconcilable conflict with the explicit language of the criteria adopted in *Boyle*, 108 S.Ct. at 2518, and conflicts with decisions on point from the Fifth and Eleventh Circuits.

What all three lower courts overlooked is that limiting "reasonably precise specifications" per *Boyle* to Type 1 specifications insures that a military contractor cannot lose a design case. The result is inescapable. Why? Because the *Shaw* court said so and derived the Type 1 - Type 2 specification dichotomy to prove that very point.<sup>13</sup> *Shaw*, 778 F.2d at 745.

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<sup>11</sup>. There are numerous other errors in the panel's approval analysis, mostly involving prohibited fact finding, invasion of jury function and the like, discussed infra at pp.20-23. In addition, the panel apparently identified the Navy's discretionary decision as the decision to deploy the F/A-18 to replace older model aircraft on a new class of carriers as part of a broad defense initiative. (See Appendix A-4,5).

<sup>12</sup>. Panel: "working drawings", i.e. "detailed engineering drawings". (See Appendix A-7 & 5).

Shaw: Type 1 "detailed, precise and typically quantitative specifications for manufacture" which includes "detail drawings and written directives as well as figures." *Shaw*, 778 F.2d at 745, and in Note 15.

<sup>13</sup>. The point is if "reasonably precise specifications" are defined in Type 1 terms the contractor cannot lose; and if in Type 2 terms (everything else, no matter how broad), the contractor cannot win. *Shaw* 778 F.2d at 745.

Rather than recognizing this, the panel concluded that inclusion of the most basic requirement of structural design in the relevant specifications would somehow make the defense "illusory" and then did exactly what *Shaw* cautioned against. It defined the relevant specifications in terms so precise,<sup>14</sup> and non-conformity in terms so narrow, it was impossible for MDC to lose. *Shaw*, 778 F.2d at 745.

The panel characterized the Navy's contractually imposed structural strength requirements as "precatory goals" and "little more than the hopes of (the) participants that the project ... will turn out well." (Appendix A-3,8,9). In so doing, the panel excluded the most basic structural design requirements from either Navy approval or the requirement of conformity. This is inconsistent, to say the least, with the basis of the defense adopted by the Court in *Boyle*, 108 S.Ct. at 2517-2518. The problem is the panel's failure to recognize the policy or legal basis of the defense. This seems to be the root cause of the panel's analytical errors, including its erroneous limitation of the "reasonably precise specifications" to the "working drawings."

There is no support for the panel's definition anywhere. It conflicts with the modifier "reasonably" used to define the precision criteria and with holdings on point in *Smith v. Xerox*, 866 F.2d at 138 (1989), and *Harduvel v. General Dynamics Corp.*, 878 F.2d 1311, 1320 (11th Cir. 1989). Both squarely hold that the government's design specifications form part of the relevant specifications per *Boyle*.

It is also inconsistent with the Fourth Circuit's affirmance of *Ramey v. Martin-Baker*, 656 F.Supp. 984 (D.Md. 1987), at 874 F.2d 946 (4th Cir. 1989). *Ramey* involved another subcontractor-designed component of the F/A-18 - - the ejection seat. The District Court held that the Navy-approved specifications were the same type as Plaintiffs rely on here.<sup>15</sup> A challenge based on imprecision was rejected, in part because the "precision of the

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<sup>14</sup>. Even more precise than *Shaw*. *Shaw* included written directives on the drawings in Type 1 specifications. *Shaw*, 778 F.2d at 745. The panel excluded them by limiting non-conformity to mismanufacture.

<sup>15</sup>. Ramey: Detail Specification 565-1, Procurement Specification 74-80020 and Military Specification 18471;

Kleemann: Detail Specification 565-4; Procurement Specification 74-410051 and Military Specifications 8860, 8863A and 8866.



specifications (met) the standard set forth by the Fourth Circuit as well as other courts." *Ramey*, 656 F.Supp. at 995.

The panel's decision is the only reported case which has affirmatively excluded all government design specifications imposed by contract from inclusion in the *Boyle* specifications.<sup>16</sup> The inherent error is demonstrated by the results achieved.

### **C. The Panel's Definition Of Conformity Is Inconsistent With The Function Of The First Two Limiting Criteria Adopted In *Boyle***

The panel held that a product conforms to "reasonably precise specifications" if it "satisfies an intended configuration", citing *Harduvel*, 878 F.2d at 1321. Thus, "conformity" requires only configuration compliance, limiting non-conformity to mismanufacture. *Harduvel*, 878 F.2d at 1321; *Shaw*, 778 F.2d at 745.

This definition, coupled with the panel's applicability standard and specification definition, will arguably abolish military contractor design liability. See *Shaw*, 778 F.2d at 745.

*Boyle* replaced the *Feres* doctrine as the basis of the defense, in part, to avoid just such a result. *Boyle*, 108 S.Ct. at 2517. Thus, the panel's definition produces results in direct conflict with the most basic premise of *Boyle*. *Eagle-Pitcher* at 6.

In addition, the panel's definition disregards the function of the first two elements of the limiting criteria, which is to assure that the design feature in question was considered by a government officer, and not merely by the contractor itself, and that the contractor acted on that exercise of discretion. *Boyle*, 108 S.Ct. at 2518. *Eagle-Pitcher* at 4. If the approved specifications include nothing but the "intended configuration", how can this possibly insure that "the design feature in question was considered by a government officer"?

There is a lot more to structural design than size and shape, as sadly illustrated by the facts of this case.

The panel's definition also renders the second element of the limiting criteria superfluous and therefore meaningless. Why? A

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<sup>16</sup> While *Trevino* also held that "working drawings" were the relevant specifications, it did so in the absence of anything else that could possibly qualify. *Trevino*, 865 F.2d at 1487.

mismanufactured product, by definition, does not present an issue of defective design. *Bynum*, 770 F.2d at 574. Thus, the *Boyle* defense is inapplicable to such claims. *McGonigal v. Gearhart Indus. Inc.*, 851 F.2d 774, 777 (5th Cir. 1988). Therefore, "conformity" as defined by the panel, can never come into play in the context of the government contractor defense. See *Trevino*, 865 F.2d at 1481 in Note 6.

Where did the panel's definition come from? Dicta in *Harduvel*<sup>17</sup> which is in turn based on a district court decision<sup>18</sup> arguably misapplying the defense in favor of a non-designing manufacturer.<sup>19</sup>

Passing over the question of misapplication, the problem presented is the panel's conversion of a designer (MDC/C.P.C.) into a nondesigning manufacturer, liable only for mismanufacture.

The panel's unprecedented and illogical definition of conformity should be reviewed and rejected.

**D. Does The *Boyle* Government Contractor Defense, When Raised by Summary Judgment, Shift The Burden Of Proof To The Plaintiff To Show That The Equipment Does Not Conform To Specifications?**

All three courts below imposed the burden on Plaintiffs to disprove the second element of the *Boyle* government contractor defense. (See Appendices A-6; B-3,4 & C-6).

The second element of the *Boyle* defense requires proof that "the equipment conformed to those specifications." *Boyle*, 108 S.Ct. at 2518. When invoked, the contractor must prove each and every element thereof by a preponderance of the evidence. *Bynum*, 770 F.2d at 574; *Koutsoubos v. Boeing Vertol*, 775 F.2d 352, 354 (3rd Cir. 1985).

MDC, in moving for summary judgment, had to support its motion "with credible evidence . . . using any of the material

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<sup>17</sup>. The Court recognized that the second element was not involved in that it was neither raised nor briefed by the Plaintiff. *Harduvel*, 878 F.2d at 1321.

<sup>18</sup>. *Zinck v. ITT*, 690 F.Supp. 1331 (S.D. N.Y. 1988).

<sup>19</sup>. ITT should have been able to obtain relief by way of the contract specification defense. See *Nielson*, 892 F.2d at 1455.

specified in Rule 56(c) . . . that would entitle it to a directed verdict if not controverted at trial." *Celotex v. Catrett*, 477 U.S. 317, 331 (1986) (Brennen J. Dissenting); *Williams*, 891 F.2d at 457-460 (1990); 10 A Wright, Miller & Kane "Federal Practice and Procedure" §2727.

MDC failed even to allege, much less prove, what the Navy approved specifications are or require. (51-52). It also failed to offer proof that the planing link on the aircraft complied with any design requirements whatsoever. (191-264).

Since Mover was relieved of proving what the design requirements were, it was a trifle difficult for Non-movers to prove that it did not conform to an unknown standard, but they tried.

There is record evidence that the design violates the "reasonably precise specifications" as defined in *Ramey*, 656 F.Supp. at 955; *Smith*, 866 F.2d at 138; and *Harduvel*, 878 F.2d at 1320. (346-350); as well as the quantitative design requirements (335, 336; 523-537); and requirements on the engineering drawings (533-534; 260-261).

On this record, in a properly run court, MDC could not get the defense submitted to a jury, much less obtain a directed verdict.

This appears to be the first reported decision which has granted summary judgment to movant, which had the burden of persuasion on the issues involved at trial, in the absence of any admissible evidence on the relevant issues as required by F.R.C.P. 56(c).<sup>20</sup>

### **E. The Key To Understanding The Panel's Analysis**

The key to understanding the panel's analysis is its misuse of an erroneous perception of Naval "participation in various stages of the aircraft's development" (Appendix A-6) to avoid the legal impediments to the defense in this case.

In various guises and forms, it justifies "creation of the defense. . ." (Appendix A-6); when combined with "the nature of defendant's product", it justifies an improper, and perhaps constitutionally suspect displacement of state law (Appendix A-5); next it supplies legally precluded "approval" of the design defect

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<sup>20</sup>. The fact that MDC submitted no admissible evidence on the elements of the defense is discussed further in Part 4 at pp. 20-23.

(Appendix A-5,6); and "enhances the likelihood of final product conformity" (Appendix A-6); then it becomes "persuasive evidence of product conformity to precise specifications" (Appendix A-8); and last, but by no means least, it "establishes the military contractor defense" (Appendix A-6).

The panel's findings ignore what happened in the real world as reflected by the record evidence. What design duty did MDC assume? To design or obtain a design for the planing link with sufficient stroke to withstand the design loads (277-279). What duty did the procurement contract impose on MDC? The duty to furnish F/A-18 aircraft so equipped. (450; 457; 480-488). When MDC failed to do so, what happened? The Navy, by invoking contractual remedies compelled MDC to do so. (260-261).

It is painfully obvious that the panel's analysis is woefully short of the mark. For example, it missed the fact that C.P.C.'s structural design of the landing gear was an unmitigated disaster. (494-583). In 1987, nine years after production commenced, every major load bearing component was being redesigned. (673). The panel failed to perceive that the "intimate" Navy involvement it relied on so excessively was a series of demands that MDC make good on its contractually imposed design obligations. (248-249; 26-261; 387-388; 494-506). To hold that meetings concerning extremely serious design defects and deficiencies are "persuasive evidence of product conformity" is incomprehensible. To hold that this design defect enhanced the combat effectiveness of the F/A-18 is absurd. (Appendix A-5).

The panel's analysis is lamentable and its opinion cries out for review and reversal.

#### 4.

### **THE COURT OF APPEALS, IN AFFIRMING THE DISTRICT COURT'S GRANTING OF SUMMARY JUDGMENT HAS ITSELF DISREGARDED MANDATORY STATUTORY PROVISIONS IN F.R.C.P. 56 AND BINDING AUTHORITY**

Arguably the panel's most egregious errors concern its affirmance of summary judgment

While review of the Fourth Circuit's action in this regard may require a record review, this Court can grant such a review where necessary when other important questions motivate grant of

*certiorari*. See e.g. *Mobil Oil Co. v. Federal Power Comm'n*, 417 U.S. 283; and *Memphis v. Greene*, 451 U.S. 100, 102 (1981).

In its decision, the panel committed the following errors in affirming summary judgment pursuant to F.R.C.P. 56;

- (1) It invaded the function of the jury by resolving issues of contested material fact;<sup>21</sup>
- (2) It resolved an issue of credibility between engineers of equal rank at MDC,<sup>22</sup> and,
- (3) Then misrelied on the facts recited in an affidavit<sup>23</sup> of one of them put at issue by the testimony of the other, who was in an arguably superior position to know the truth concerning the matter in controversy;<sup>24</sup>
- (4) It misrelied on the facts recited in an affidavit invalid as to form and content as required by F.R.C.P. 56(e) in that the affidavit recites it was based, in part, on hearsay (221); and the vast majority of the facts recited were affirmatively shown to be outside the affiant's personal knowledge (639, 644-647; 649-650). Further, a serious question of credibility about a material fact recited in the affidavit was raised by the affiant's deposition testimony; (compare facts recited in ¶3 at 221, with affiant's testimony at 642-643). The affidavit is no evidence.<sup>25</sup> *Arguelles v. U.S. Bulk Carriers*, 408 F.2d 1065, 1068 (4th

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<sup>21</sup>. A few are the panel's findings that the Navy (1) retained discretion over the design; (2) proposed the configuration; (3) conducted extensive drawing review; (4) rejected a remedial redesign proposed by MDC in 1983; and (5) that the design defect in question "inhered" in the unique design which violated neither the military nor the quantitative specification requirements. (See Appendix A-7-9).

<sup>22</sup>. Mr. J.C. Phillips and Mr. David L. Bourisaw.

<sup>23</sup>. The affidavit of Mr. J. C. Phillips (241-248).

<sup>24</sup>. The disputed issue of fact concerns whether a remedial redesign of the planing link was formally proposed by MDC to the Navy in 1983. Mr. Phillips, in his affidavit, claims it was and the Navy rejected it. (241-242). Mr. Bourisaw, MDC's Unit-Chief F/A-18 Main Landing Gear Design testified that it was not and gave the reason why. (368-369). The panel found it was and made much of the Navy's rejection. (Appendix A-8). (Excerpts from Mr. Bourisaw's deposition testimony are attached as Appendix H).

<sup>25</sup>. The affidavit is Mr. Robert W. Palmer's. (221-227). (Excerpts from Mr. Palmer's deposition testimony are attached as Appendix I).



Cir. 1969).

- (5) The panel rejected Petitioners' version of contested facts, where supported by admissions by MDC, unqualified testimony of MDC's cognizant engineers and determinations by the Navy;<sup>26</sup>
- (6) The panel viewed the evidence in the light most favorable to Mover, and drew both permissible and impermissible inferences therefrom in Mover's favor<sup>27</sup>
- (7) Last, but by no means least, the panel relied on material outside the record for facts critical to its opinion.<sup>28</sup>

To list all the binding and persuasive authorities which are violated by the panel's actions would exhaust the thirty page limit on this petition. A few are: *Automatic Radio Mfg. Co. v. Hazeltine Research, Inc.*, 339 U.S. 827, 831 (1950); *Poller v. Columbia Broadcasting Sys., Inc.*, 368 U.S. 464 (1962); *U.S. v. Diebold, Inc.*, 369 U.S. 654, 655 (1962); *Adickes v. S. H. Kress & Co.*, 398 U.S. 144, 159-161, (1970); *Arnett v. Kennedy*, 416 U.S. 134, 139-140 (1974); *Anderson v. Liberty Lobby*, 477 U.S. 242, 247-252, (1986); *Williams v. Borough of West Chester, Pa.*, 891 F.2d at 459-460 (3rd

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<sup>26</sup>. This included not only the items listed in Footnote 21, but also numerous others. One such is the panel's disregard of testimony that Navy drawing approval was by acquiescence. (534-535); another is that the design did not violate the quantitative requirements. See excerpts from deposition testimony of Mr. Dennis Gendreau and Mr. Glen Kirkland, attached as Appendices J & K.

<sup>27</sup>. Two such examples are: (1) The panel inferred extensive review of the design drawings by the Navy from the fact that MDC was required to submit them to the Navy. (Appendix A-8). (2) The panel inferred Navy participation in the design of the planing link from the occurrence of periodic meetings between the Navy and MDC personnel. (Appendix A-8). This required a whole series of intervening inferences, all of which are prohibited.

<sup>28</sup>. (1) Opinion at Appendix A-5, sentence beginning "The F/A-18 aircraft was part. . .", ending with ". . . all-weather fighters". There is no record evidence to support this. Source: Unsupported allegation in MDC's appellate brief.

(2) Opinion at Appendix A-5, sentence that starts "Beginning with bids . . ." and ending with ". . . their submissions." There is no record evidence that teams of Navy engineers met with any contractor as recited in the Court's opinion. Source; MDC's appellate counsel's oral argument.

(3) Opinion at Appendix A-5, sentence beginning with "The Government also maintained . . ." and ending with ". . . in St. Louis". This is a significant expansion of the facts recited in Paragraph 8 of the Palmer affidavit.

Cir. 1990); *Ross v. Communications Satellite Corp.*, 759 F.2d 355, 364 (4th Cir. 1985); *Antonio v. Barnes*, 464 F.2d 584, 585 (4th Cir. 1972); *Arguelles v. Bulk Carrier*, 408 F.2d at 1065, 1068 (4th Cir. 1968); *Buxton v. Plant City, Fla.*, 871 F.2d 1037, 1041 (11th Cir. 1989); *Leslie v. Ingram*, 786 F.2d 1533, 1535 (11th Cir. 1986); *Stearns v. Hertz*, 326 F.2d 405, 408 (8th Cir. 1964); and *Goldstein v. Kelleher*, 728 F.2d 32, 37 (1st Cir. 1984); *Peng-Fei Chang v. University of Rhode Island*, 554 F.Supp. 1203, 1205-1206 (D.C. R.I. 1983); F.R.C.P. Rule 56(e); also see cases collected in Vol. 10A Wright, Miller & Kane §2726, §2727, §2734 & §2739.

Summary judgment has been affirmed in favor of a party who bore the burden of persuasion at trial, in spite of the fact that (1) Mover neither plead nor proved what the Navy-approved specifications were or required (51-52; 191-266); (2) both of its affidavits are no evidence; and (3) the balance of its documentary submissions are either favorable to Non-movers (260-261), illegible (219), or meaningless (e.g. 229-238); (4) there was no admissible evidence to support it. This imperils the right to trial by jury guaranteed by Amendment VII to the United States Constitution.

Such a decision, rendered in the most pedestrian case imaginable, would commend itself to this Court's attention.

The panel's decision should be reviewed and reversed.

## CONCLUSION

For the above reasons, Petitioners Carol Anne Kleemann, individually, as executrix and personal representative of the estate of Captain Henry M. Kleemann, as the guardian of the minors Katherine M. Kleemann and Michael Andrew Kleemann; and Susan E. Seiden and Steven S. S. Seiden, Jr., pray that their petition for writ of *certiorari* be granted.

Respectfully submitted:

Robert S. Cooper, Jr.  
LAW OFFICES  
OF ROBERT S. COOPER JR.  
Woodstock, (Route 14)  
Post Office Box 190  
Port Haywood, Virginia 23138  
(804) 725-9207 or 725-3937

*Attorney for Petitioners*



APPENDIX A

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No. 89-2032

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CAROL ANNE KLEEMANN, Individually  
and as the Executive and Personal  
Representative of the Estate of  
Henry M. Kleemann, as the Guardian  
of the minors Katherine M. Kleemann  
and Michael Andrew Kleemann; SUSAN E.  
SEIDEN; S. S. SEIDEN, JR.

Plaintiffs - Appellants

versus

McDonnell Douglas Corporation

Defendant - Appellee

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No. 89-2047

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CAROL ANNE KLEEMANN, Individually  
and as the Executive and Personal  
Representative of the Estate of  
Henry M. Kleemann, as the Guardian  
of the minors Katherine M. Kleemann  
and Michael Andrew Kleemann; SUSAN E.  
SEIDEN; S. S. SEIDEN, JR.

Plaintiffs - Appellees

versus

McDonnell Douglas Corporation

Defendant - Appellant

Appeals from the United States District Court for the District of Maryland, at Baltimore. Joseph C. Howard, District Judge. (CA-873249-JH).

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Argued: October 4, 1989

Decided: December 6, 1989

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Before WILKINSON, Circuit Judge, HAYNSWORTH, \* Senior Circuit Judge, and WILLIAMS, United States District Judge for the Eastern District of Virginia, sitting by designation.

Robert Sibley Cooper, Jr. for Appellants. Thomas C. Walsh (Douglas E. Winter, Robert W. Shely, BRYAN, CAVE, MCPHEETERS & MCROBERTS; George L. Russell, Jr., Robert J. Mathias, PIPER & MARBURY, on brief) for Appellee.

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\* Judge Haynsworth participated in the consideration of this case but died prior to the time the decision was filed. The decision is filed by a quorum of the panel. 28 U.S.C. §46(d).

To avoid liability for accidents involving military equipment, military contractors are required to show, *inter alia*, that their products conformed to reasonably precise specifications approved by the United States. *Boyle v. United Technologies Corp.*, 108 S. Ct. 2510 (1988). Here we must decide what conformity means. Plaintiffs allege that the landing gear of an F/A-18 aircraft, in which plaintiffs' decedent was killed, did not conform to general performance requirements contained in defendant's original contract with the Navy. We cannot, however, equate as a matter of law a failure of performance with an absence of conformity. Nor do the precatory goals developed for a product at the start of the procurement process establish the "reasonably precise specifications" to which the product must conform. Because the landing gear plainly did not deviate from the ultimate design required by the Navy in the whole of its negotiations with the contractor, we uphold the grant of summary judgment for defendant and affirm the applicability of the government contractor defense to this case.

## I.

On December 3, 1985, Captain Henry M. Kleemann, a U.S. Navy pilot, was killed when his F/A-18 aircraft went out of control during landing, left the runway, and overturned. Defendant McDonnell Douglas Corporation (MDC) had designed the F/A-18 for the Navy. The Navy concluded that Captain Kleemann's accident was caused, in part, by failure of the planing link assembly on the main landing gear. The planing link assembly was designed to assist folding and unfolding the wheel assemblies into and from the wheel well and to lock the wheels appropriately for takeoff and landing. It allows the wheels to "deplane" or move out of line with the direction of the aircraft, during retraction and extension of the landing gear.

Kleemann's surviving spouse and children brought a diversity action in the district court of Maryland claiming that the plane was negligently and defectively designed by McDonnell Douglas. Plaintiffs contended that the landing gear did not conform to reasonably precise specifications contained in the Navy's original contract with MDC. Specifically, they alleged that the landing gear failed to meet the requirement that it withstand normal landing

loads without bending, unlocking or causing uncontrolled motion of the aircraft. (citing SD-24K-Volume 1, and Military Specification MIL-A-8863A).

Defendant, on the other hand, argued that the specifications proffered by plaintiff were not the "reasonably precise specifications" required by *Boyle*, because such general requirements do not tell the contractor what to build and how to design the product. MDC contended that the accident aircraft incorporated all Navy-approved landing gear designs and modifications through the date of delivery. As such, the landing gear conformed to all precise, quantitative specifications which evolved out of the continuous exchange between MDC and the Navy.

The district court held that the operative question was whether the product conformed to the "ultimate design specifications," not to the qualitative, precatory specifications used in the procurement process. The court concluded that plaintiffs had not presented evidence that the landing gear on the accident aircraft deviated from the ultimate design specifications approved by the Navy. It granted defendant's motion for summary judgment, and this appeal followed.<sup>1</sup>

## II.

We review at the outset the elements of the government contractor defense. Under *Boyle v. United Technologies Corp.*, 108 S. Ct. 2510, 2518 (1988), a contractor is not liable for design defects in military equipment when: (1) the United States approved "reasonably precise specifications"; (2) the equipment conformed to those specifications; and (3) the contractor warned the government about any dangers in the use of the equipment that were known to the contractor but not to the government.

Plaintiffs' claim is precisely the sort for which the defense was intended. This is true both because of the nature of defendant's product and the characteristics of the process by which it was designed. At issue here is a discretionary decision involving military hardware in which the government was a substantial participant.

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<sup>1</sup> The district court also denied a motion to dismiss filed by defendant on the grounds that the action was barred by California's one-year statute of limitations for wrongful death claims. The court found that Maryland's three-year statute of limitations applied, and we decline to disturb its decision.

See *Boyle*, 108 S. Ct. at 2517. The F/A-18 aircraft was part of a broad defense initiative involving the Navy's deployment of a new "CV" class of aircraft carrier. The "CV" carrier had multi-mission capabilities as compared to older, more specialized counterparts. The F/A-18 was designed to provide support for the new carrier, and to replace with a single aircraft the Navy's clear weather fighters and all-weather fighters. It is hard to imagine a matter more uniquely in the province of the military - - and one less appropriate to second-guessing by civilian courts - - than the development of a high technology, multi-mission aircraft. see id. at 2517-8.

Similarly, the design details of the F/A-18 illustrate the balancing of military and technological factors, including "the trade-off between greater safety and greater combat effectiveness." *Id.* at 2517. For example, the main landing gear at issue here had to absorb extremely high amounts of energy generated upon landing on a carrier. On the other hand, stowage of the gears could not interfere with external weapon storage. These competing concerns required a unique "levered gear" design to provide adequate distance between the extended right and left main landing gears and thereby ensure stability of the aircraft upon landing. The design, developed by MDC and approved by the Navy, employed a planing link assembly to deplane the wheels during retraction and extension of the landing gear.

The design and production of the F/A-18 also illustrate the exchange of views in the procurement process between military officials and the private contractor. See *Harduvel v. General Dynamics Corp.*, 878 F.2d 1311, 1320 (11th Cir. 1989); *Tozer v. LTV Corp.*, 792 F.2d 403, 407 (4th Cir. 1986). Beginning with bids for what would become the F/A-18, teams of Navy engineers met with each contractor for extended discussions of their submissions. When the Navy selected MDC to develop and build the F/A-18, the final design contracts for the aircraft incorporated MDC's original proposal as modified during extensive negotiations between the parties. During design development, MDC was required to submit detailed engineering drawings to the Navy for approval. All changes to the design or specifications of the aircraft required Navy approval, including proposals to address problems with the allegedly defective landing gear. The government also maintained an extensive staff of aircraft engineers on site at MDC's facilities in St. Louis.

It is this salient fact of governmental participation in the various stages of the aircraft's development that establishes the military contractor defense. Indeed, active governmental oversight is relevant to all three elements of defendant's burden. Where, as here, the Navy was intimately involved at various stages of the design and development process, the required government approval of the alleged design defect is more likely to be made out. See *Ramey v. Martin-Baker Aircraft Co.*, 874 F.2d 946, 950-51 (4th Cir. 1989); *Dowd v. Textron, Inc.*, 792 F.2d 409, 412 (4th Cir. 1986). Similarly, the Navy's extensive participation, including reservation of the power to approve or disapprove design modifications, enhances the likelihood of final product conformity. Government involvement in the process also make it more likely, thought not certain, that a sharing of the information will occur with respect to potential dangers in the use of the equipment. As a final matter, extensive governmental participation provides tangible evidence of the strong federal interest which justifies the creation of a federal common law defense for government contractors in the first place.

### III.

Plaintiffs argue nonetheless that the government contractor defense does not apply because the main landing gear of decedent's F/A-18 failed to conform to the government's "reasonably precise specifications" as required by *Boyle*. There is no evidence, however, that the landing gear failed to conform to the precise quantitative specifications embodied in the totality of documents exchanged between the parties.<sup>2</sup>

#### A.

Plaintiffs contest the district court's conclusion that ultimate design specifications are most relevant to the government contractor defense. They contend that the reasonably precise specifications

#### A-6

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<sup>2</sup> Plaintiffs in their opposition to summary judgment below appear to dispute only whether the landing gear conformed to reasonably precise specification. However, we are persuaded by our review of the evidence that the Navy also approved those specifications. Further, there is no evidence that MDC failed to warn the Navy of dangers in the design of the landing gear that were unknown to the government.



for the main landing gear of the F/A-18 are contained in "Detail Specifications for Model F/A-18 Aircraft" (SD-565-1-4), certain incorporated provisions from the Navy aircraft manual (SD24-K Volume I-General Specifications For Design and Construction of Aircraft Weapon Systems), three relevant incorporated Military Specifications (MIL-A-8860, 8863A and 8866), and Procurement Specification 74-410051. Plaintiffs allege that these documents require that the landing gear be strong enough to withstand normal landing loads without bending, that it remain locked after extension until unlocked from the cockpit, and that any failure of the landing gear not result in uncontrollable movement of the airplane.

We do not dispute that the documents referenced by plaintiffs embody part of the universe of specifications to which the landing gear must conform. However, plaintiffs fail to appreciate that military hardware does not suddenly spring into being from initial design and procurement specifications, but evolves through drawings, blueprints and mockups agreed upon by the parties. *See Harduvel*, 878 F.2d at 1320-21; *Ramey*, 874 F.2d at 948 n.4-5. The ultimate design of the product is determined not only by the original procurement and contract specifications, but also by specific, quantitative engineering analysis developed during the actual production process.

Indeed, many of the documents cited by plaintiffs reflect no more than the initial, theoretical phase of the development of the F/A-18 landing gear. The general qualitative specifications contained therein were incorporated by reference into the full scale development contracts issued to MDC for the development of the F/A-18. As part of its duties under the contract, MDC used the Navy specifications to develop required structural load parameters which served as a basis for the detailed design of the aircraft. These design loads comprised five volumes of material which were submitted to the Navy. The contract also required MDC to submit detailed design drawings to the Navy for approval as the general specifications became embodied in the actual landing gear. The Navy reserved the right to reject drawings and to require revisions and modifications. These working drawings, and not simply the general qualitative specifications from the procurement stage, comprise "the reasonably precise specifications" contemplated by *Boyle*

Where the military procurement process involves this kind of continuous exchange between the contractor and the government,



the process it self becomes persuasive evidence of product conformity to precise specifications. Here the government maintained discretion over the design of the product throughout; it did not simply turn over such discretion, and the military decisions inherent therein, to the private contractor. In contrast to the Fifth Circuit's conclusion in *Trevino v. General Dynamics Corp.*, 865 F.2d 1474, 14878 n. 13-14 (5th Cir. 1989), that there had been inadequate review of the design drawings to make out the defense, the Navy here performed extensive review of detailed design drawings submitted by MDC. The Contract Data Requirements List, which laid out required document submissions under the contract, specifically required that Landing Gear Design Reports and Landing Gear Specifications be submitted for Navy review and approval. Moreover, Navy engineers and other personnel participated in the F/A-18 design process through periodic design review meetings including Detail Design Review meetings, Technical Coordination meetings, F/A-18 Specialty Design Reviews, Program Management Reviews, Flight Test Readiness Reviews, and Production Readiness Reviews. Such meetings, of course, bolster the underpinning of the defense, namely that the contractor should not be held liable at law for performing the government's bidding. See *Boyle*, 108 S. Ct. at 2518.

It is also undisputed that the Navy exercised complete discretion over suggested design changes in connection with the landing gear design. Between 1979, when F/A-18 test flights began, and 1985, the Navy expressly approved or required a substantial number of landing gear design modifications and rejected others, as evidenced by the Safety Action Record maintained by MDC. For example, in 1983 the Navy declined to implement an MDC proposal for an improved planing link that incorporated a coiled spring design. MDC believed this design would offer greater resistance to the buckling of planing link. On the other hand, the Navy accepted a proposed modification in 1984 which incorporated a hydraulic restrictor designed to protect the planing link from bending due to excessive torque forces. (Several years later, the Navy did incorporate a coiled spring design similar to the type MDC had proposed in 1983).

Plaintiffs' reference to the general failure of F/A-18 landing gear to withstand normal landing loads without bending or unlocking fails to take into account this significant history. Requirements such as an ability to withstand normal loads and

prohibitions against operational failures represent little more than the hopes of participants that the project on which they are about to embark will turn out well. General qualitative specifications must be distinguished from the "detailed, precise and typically quantitative specifications for manufacture of a particular military product." *Shaw v. Grumman Aerospace Corp.*, 778 F.2d 736, 745 (11th Cir. 1985). These two broad types of specifications often overlap and may even be at cross purposes - - for example, design specifications for a complex back-up system may conflict with the qualitative requirements of ease of maintenance, combat effectiveness or cost containment. *Id.* at 745. Only the detailed, quantitative specifications - - and not those calling for such vagaries as a failsafe, simple or inexpensive product - -are relevant to the government contractor defense.

In essence, plaintiffs' argument is that the ultimate design of the landing gear failed to produce an aircraft that performed perfectly. Plaintiffs' view would render the government contractor defense illusory. Nonconformance to the precise specifications must mean more than that the design does not work in compliance with some "general admonition against an unwanted condition." *Harduval*, 878 F.2d at 1319 n.3. A product involved in a design-induced accident would, as a definitional matter, always be deemed not to comply with such generalities since no performance specifications approved by the government would purposely allow a design that would result in an accident. In fact, plaintiffs describe exactly the situation in which the government contractor defense does apply; when the required ultimate military design failed to produce a "reasonably safe" product under state law. Contrary to plaintiffs' assertions, a product conforms to reasonably precise specifications if it satisfies "an intended configuration" even if it "may produce unintended and unwanted results." *Id.* at 1317. The evidence demonstrates that the alleged defect inhered in the unique design of the landing gear itself - - as required by the Navy - - and did not result from any deviation from the required military specifications.

## B.

Plaintiffs further allege that the Navy had itself concluded that the landing gear did not conform to specifications. They rely upon a Notice of Defect issued by the Navy to MDC in November 1983,

in connection with the recurring problem of bending of the planing link assembly on the main landing gear of the F/A-18.

Plaintiffs' argument fails for several reasons. First, the very purpose of the government contractor defense is to encourage active communication between suppliers of military equipment and military authorities in the development and testing of equipment. *McKay v. Rockwell Int'l Corp.*, 704 F.2d 444, 450 (9th Cir. 1983). This cooperative effort must include identification by the parties of actual and potential problems during the design and production. If a mere notification of defect precluded application of the government contractor defense, the climate of candid exchange between the government and the contractor would be compromised.

Second, it is undisputed that MDC addressed the problem of the bent planing links in response to the Notice of Defect. In early 1984, MDC and the Navy mutually concluded that the hydraulic system of the aircraft allowed the landing gear to rotate into stowage before the wheel stopped spinning, exposing the planing link to torque forces in excess of design specifications. In response, MDC designed a "hydraulic restrictor" to slow the rotation of the gear after takeoff and before stowage. The Navy approved the design of the hydraulic restrictor and directed that it be incorporated into all new production models, including the aircraft that Kleemann was flying at the time of the accident. On May 24, 1985, the Navy advised MDC that the Notice of Defect was formally closed.

#### IV.

In sum, we find no evidence that the landing gear deviated from the configuration which was proposed by the Navy and reduced to precise specification by the continuous back and forth exchange between the Navy and MDC. The judgment of the district court is therefore

**AFFIRMED.**

## APPENDIX B

### IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF MARYLAND

CAROL ANNE KLEEMANN, *et al.*

Plaintiffs

v.

Civil No. JH-87-3249

McDONNELL DOUGLAS CORPORATION

Defendant

#### MEMORANDUM OPINION

This wrongful death action was referred to the Honorable Deborah K. Casanow for a recommendation on all dispositive motions. The instant matter under consideration is the defendant's motion for summary judgment on the government contractor's defense. It is recommended that the defendant's motion be granted. The plaintiffs have filed numerous objections and the defendant has responded thereto. Upon *de novo* review of the motion and objections filed, this Court adopts Magistrate Chasanow's Report and Recommendation in full.

#### I.

##### Magistrate Chasanow's Report

The government contractor's defense provides that a contractor is entitled to judgment if it can prove three elements: (1) the United States approved reasonably precise specifications; (2) the equipment conformed to those specifications; and (3) the supplier warned the United States about dangers in the use of the equipment that were known to the supplier but not to the United States. *Boyle v. United Technologies Corp.*, 108 S. Ct. 2510, 2518 (1988).

McDonnell Douglas Corp. ("MDC") moved for summary judgment on this affirmative defense, and plaintiffs, in their opposition, disputed only the second element of the defense, *i.e.*, whether the product conformed to the specification requirements.

The dispute between the parties in this case is whether those

specifications include all contract requirements from the beginning of the design process, or whether they refer solely to the ultimate design specifications for the particular landing gear which is alleged to have failed. The defendants assert that these "reasonably precise specifications" refer solely to the ultimate design specifications of the landing gear, and not to the precatory specifications used at the outset of a procurement process.

Magistrate Chasanow found the defendant's argument persuasive and relied on *Shaw v. Grumman Aerospace Corporation*, 778 F.2d 736 (11th Cir. 1985), for its definition of "specifications." Therein the court stated:

Although we are conscious of some overlap, for purpose of our analysis we divide specifications into two types: (1) detailed, precise and typically quantitative specifications for manufacture of a particular military product - - that is to say, the design or blueprint for production, and (2) more general and more qualitative specifications, such as performance or missions criteria - - that is to say, all other specs besides type one.

778 F.2d at 745.

The Eleventh Circuit held that only the first type of specifications are relevant to the government contractor defense. Moreover, a claim that the design of a product contained in the precise type one specifications does not conform to general type two qualitative specifications reflects a discrepancy that does not defeat the defense. *Id.* Magistrate Chasanow found that this precise scenario existed in the instant motion and, accordingly, recommended that the defendant's motion be granted.

## II.

### Plaintiffs' Objections to Magistrate Chasanow's Report and Recommendation

The plaintiffs' first allegation of error in the report is that the Magistrate failed to consider whether the subject aircraft conformed with all the terms of the Detail Specification SD-565-1-4 as revised through August 1, 1983. These specifications allegedly incorporate by reference all requirements for the landing gear of this aircraft that are contained in the Navy's General Specifications for Fixed Wing Aircraft Design and various Military



Specifications including 8860, 8863A and 8866. In addition, plaintiffs claim that IAFC 40 does not constitute a detailed specification.

As *Shaw, supra*, points out, procurement specifications do not constitute reasonably precise specifications. These specifications are not the ultimate design specifications to which a court should turn to determine the applicability of this defense.

Magistrate Chasanow did not determine that IAFA 40 was the only reasonably precise specification applicable to the landing gear in question. Rather, she determined that MDC was required to manufacture and deliver the subject aircraft in accordance with the design of the gear as a whole as of the time it was modified by IAFC 40. Once the government accepted this modification, the design of the landing gear was set and it was that design to which the landing gear had to be manufactured and delivered. To date, the plaintiffs have not presented evidence of any material deviation in the landing gear from the ultimate design specifications.

Plaintiffs' second allegation of error is that *Shaw supra*, does not provide any support for the Magistrate's opinion. Plaintiffs discuss at length the merits of this case. They allege that the present case is "on all fours factually" with *Shaw*, and therefore, this Court should deny MDC the benefit of the government contractor defense.

What plaintiffs fail to realize is that the Magistrate relied on *Shaw* for one limited purpose; to illustrate the analytical distinction between qualitative and quantitative specifications. Moreover, *Shaw* is not "on all fours factually" with the present case because the defendant in *Shaw* had not fulfilled the third element the *Boyle* test: the requirement that the manufacture warn the government of all dangers in the use of the product of which it is aware and of which the government is not. *See Shaw*, 778 F.2d at 747.

Plaintiffs claim that Magistrate Chasanow completely ignored the only case that offers any real guidance as to the meaning of "reasonably precise specifications," *Ramey v. Martin Baker Aircraft Co., et al.*, 656 F. Supp. 984, 993-995 (D. Md. 1987), lack merit. Her opinion expressly cites this case (Report at 4, N.2). *Ramey* is distinguishable because the specifications discussed therein were not the precatory specifications relied upon here by the plaintiffs.

Plaintiffs additionally contend that Magistrate Chasanow converted the government contractor defense into the much older

"specification defense." Plaintiffs allege that it is insufficient for a contractor to simply supply the device shown in the blueprints, (Objections, p. 19) and that MDC does not enjoy the status of a non-designing contractor who merely manufactures products made in accordance with some third-party's specifications (Objections, p. 21).

This argument misses the point. Contractors are prohibited by contract from manufacturing and delivering anything except equipment conforming to the ultimate quantitative design specifications. Therefore, the Magistrate was correct in determining that "[t]he second element - conformance - must be tied to the first element . . . [w]hatever reasonably precise specifications are approved are the ones to which the contractor's product must conform," *Report* at 6. *See Boyle*, 108 S. Ct. at 2518.

Plaintiffs also claim that MDC failed to carry its burden of proof on this dispositive motion and that there exist several questions of material fact to preclude judgment in MDC's favor. They allege that Magistrate Chasanow improperly engaged in a great deal of fact finding and resolution of disputes as to factual matters. (Objections, p. 24). This motion does not involve determination of facts; rather, it involves a question of law. This Court agrees with Magistrate Chasanow that the plaintiffs have not presented evidence which reveals a material breach in the landing gear from the ultimate design specifications. Rather, the plaintiffs have not satisfied their burden in response to this motion.

Finally, plaintiffs claim that they were never granted leave to file a rebuttal brief. The Court notes that the plaintiffs did not submit a copy of their rebuttal brief along with their motion, as is customary. Nevertheless, plaintiffs have had an opportunity to make any additional arguments through their objections. The Court finds that there has been no prejudice to the plaintiffs, as this Court has given *de novo* review of the motion. Moreover, the filing of a rebuttal brief is not a right provided by the Local Rules. Local Rule 6.

For the foregoing reasons, the defendant's motion shall be granted. A separate order shall be entered.

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Joseph C. Howard  
United States District Judge



## APPENDIX C

### IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF MARYLAND

CAROL ANNE KLEEMANN, et al.

v. Civil Action No. JH-87-3249

McDONNELL DOUGLAS CORPORATION

#### MAGISTRATE'S REPORT AND RECOMMENDATION

Currently pending before the court is defendant's motion for summary judgment on the basis of the government contractor defense (Paper No. 38). Plaintiffs have filed a response to defendant's motion (Paper No. 48), and McDonnell Douglas filed a reply (Paper No. 53).

The parties agree on the law controlling the government contractor defense. A defendant is entitled to judgment if it can prove three elements: (1) The United States approved reasonably precise specifications; (2) the equipment conformed to those specifications; and (3) the supplier warned the United States about dangers in the use of the equipment that were known to the supplier but not to the United States. *Boyle v. United Technologies Corp.*, 108 S.Ct. 2510, 2518 (1988). This is an affirmative defense, and the defendant bears the burden of persuasion at trial on these issues.

The Fourth Circuit has said the following about summary judgment:

Summary judgment is proper only when it is clear that there is no dispute concerning either the facts of the controversy or the inferences to drawn from those facts. *Morrison v. Nissan Motor Co.*, 601 F.2d 129, 141 (4th Cir. 1979); *Stevens v. Howard D. Johnson Co.*, 181 F.2d 390, 394 (4th Cir. 1950). The party seeking summary judgment carries the burden of showing that there is no genuine issue as to any material fact in the case. Fed. R. Div. P. 56(c); *Charbonnages de France v. Smith*, 597

F.2d 406, 414 (4th Cir. 1979). When determining whether the movant has met its burden, the court must assess the documentary materials submitted by the parties in the light most favorable to the non-moving party. *Gill v. Rollins Protective Services Co.*, 773 F.2d 592, 595 (4th Cir. 1985).

*Pulliam Inv. Co., Inc. v. Cameo Properties*, 810 F.2d 1281, 1286 (4th Cir. 1987). Because defendant bears the burden of proof on the affirmative defense asserted, it is its responsibility, as the moving party, to support its motion with appropriate affidavits or other similar evidence. Defendant claims that the material facts are not in dispute and that it is entitled to judgment as a matter of law. Plaintiffs, in their opposition, dispute only the second element of the government contractor defense, whether the product conformed to the specification requirements. In addition to contending that defendant is not entitled to summary judgment, plaintiffs contend that they are entitled to judgment in their favor on the inapplicability of the government contractor defense because the evidence conclusively show that the product failed to comply with the specifications.

The policy invigorating the government contractor defense is that the inherent conflict between the assertion of state law liability for defective design and the contractual duty imposed by the federal government on the supplier to provide a product built to precise specifications cannot be countenanced. The conflict is resolved by immunizing the contractor from state law liability regarding products for which specifications are prescribed by the government. Few cases have confronted the issue in precisely the way raised here. Unfortunately, little guidance is given as to the identification of those specifications to which the product must conform in order to meet the defense. The dispute between the parties in this case is whether those specifications include all contract requirements from the beginning of the design process, or whether they refer solely to the ultimate design specifications for the particular landing gear which is alleged to have failed. Plaintiffs interchangeably refer to the element of the government contractor defense as whether the product satisfies the "contractually imposed requirements," or the "government approved specifications," or the "imposed specification requirements," or the "government-approved design specifications." Plaintiffs state that

"under *Boyle*, it is McDonnell Douglas Corp. which must bear responsibility for building a product which conforms to and satisfies the requirements of the design approved by the Navy." Defendant's reply points out that there is and must be a distinction between the ultimate specifications for particular mechanism and the precatory specifications used at the outset of a procurement process. Defendant asserts that neither these early procurement specifications nor ancillary contract requirements are the "reasonably precise specifications" referred to in the government contractor defense.

At the time of the accident, the landing gear according to defendant, conformed to the specifications in IAFC 40A (Def. Ex. No. 8 and No. 2 at paragraph 18).<sup>1</sup> That design was a Navy approved modification to the original design of the landing gear in the F/A-18 aircraft.<sup>2</sup> Plaintiffs do not dispute this assertion. Rather, they claim that the design used in the IAFC 40A failed to conform to other contractual specifications. Plaintiffs claim that

[t]he evidence conclusively shows that the design of the F/A-18 main landing gear planing mechanism and associated lock linkages does not now conform, and never has conformed, to the specification requirements and in fact and law materially deviates from those specifications.

### C-3

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1 Exhibits will be identified as follows:

Appendix to Defendant's Motion for  
Summary Judgment:

Def. Ex. No. \_\_\_\_\_

Appendix to Plaintiff's Response:

Pl. Ex. No. \_\_\_\_\_

Appendix to Defendant's Reply:

Def. Reply  
Ex. No. \_\_\_\_\_

<sup>2</sup> For another case applying the Government Contractor Defense to a component of the F-18, see, *Ramey v. Martin-Baker Aircraft Co.*, 656 F.Supp. 984 (D.Md. 1987). Judge Northrop's opinion contains a detailed description of the design process, 656 F.Supp. at 993-95.

Plaintiffs' Response at 4. They rely on Pl. Ex. 14,<sup>3</sup> a letter from McDonnell Douglas to the Department of the Navy in November of 1984. In that letter, defendant "acknowledges the condition described in reference (a) as a defect, constituting non-compliance with the requirements of the subject contract (s)." Reference (a) is a Notification of Defect dated November 8, 1983, stating that conditions in the design of the F/A-18 cause bending of the left and right main landing gear planing links.<sup>4</sup> That Notice of Defect preceded the redesign that was on Captain Kleemann's plane, but plaintiffs claim that the letter acknowledges that bending of the landing gear constitutes non-conformance with specifications. The letter specifically states that a suspected defect in the skid control valve was not the problem. Rather, the design change in Interim Airframe Change (IAFC) 40A was the agreed upon solution.

Similarly, plaintiffs point to Pl. Ex. No. 3, a September, 1987 letter from the Navy identifying the planing link failures as non-conformance to service life requirements in the contracts.<sup>5</sup> The specific provisions violated are MIL-A-88-66, found as Pl. Ex. No. 27, and imposed by S. D. 565-1-5, described in Def. Ex. No. 1 at 5-1.

Plaintiff would put a government contractor in a Catch-22 situation by making it possible to meet either of the first two requirements of the government contractor defense, but not both. The first prong requires government approval of reasonably precise

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<sup>3</sup> Identical to Pl. Ex. No. 33.

<sup>4</sup> Pl. Ex. No. 31 is that Notification of Defect.

<sup>5</sup> Defendant's assertion that post-accident developments may not be used to assess its defense cannot withstand analysis. It claims, both under Fed. R. Civ. Evid. 407 and general principles of relevancy, that consideration of later events is improper. Evidence is excluded under Rule 407 when a subsequent remedial measure is used "to prove negligence or culpable conduct." Here, it is not the implied admission inherent in a remedial measure that is being offered. Rather, the explicit acknowledgements that the bending problem is a defect of some sort is asserted as having evidentiary value. Further, the evidence is not offered to prove culpability, but to prove defendant's and the Navy's interpretation of the applicable specifications or requirements, *see, e.g., Ryan v. Port of New York Authority*, 281 A.2d 539 (N.J. Super. 1971), cited in 23 C. Wright and K. Graham, *Federal Practice & Procedure* §5290 at 149 (1980). Similarly, the interpretation of specifications by contractor and government is a relevant inquiry in this case.

specifications, and not the mere setting of "performance specifications." *Koutsoubous v. Boeing Vertol, Div. of Boeing Co.*, 755 F.2d 352, 355 (3rd Cir.), *cert. denied*, 106 S. Ct. 72 (1985); *Wilson v. Boeing Co.*, 655 F.Supp. 766, 773 (E.D. Pa. 1987). The second element - conformance - must be tied to the first element.<sup>6</sup> Otherwise, it would be nearly impossible to establish the defense in a design defect case. Plaintiffs would deny the defense whenever the precise specifications ultimately approved by the government turn out not to meet the more general performance requirements set out at the beginning of the process. That is not the law. Rather, whatever reasonably precise specifications are approved so as to satisfy the first element of the defense are the ones to which the contractor's product must conform. Here, that is LAFC-40A. Plaintiffs do not contend that there was a material breach with regard to that detail specification and defendant's affidavits reveal none, *Wilson*, 655 F.Supp. at 744 ("Failure of contractor to conform to the specifications defeats the defense only if the discrepancy was a material one.")

A contractor does not enjoy immunity when the government contracts for a product and merely specifies capacity, for example, and leaves "the precise manner of construction," 108 S.Ct. at 2516, to the contractor. When the precise construction specifications are prescribed or approved by the government, the contractor cannot be held responsible for compliance with what turn out to be inconsistent capacity or performance specifications. Defendant was not at liberty to change the landing gear design, once approved by the Navy, even if it found the design not to meet general contract requirements. Without approval from NAVAIR engineering, no modifications were possible, *see, e.g.*, Def. Ex. 30, entry no. 48 and 55. Furthermore, some of the contract requirements are so general - and sweeping - so as to be meaningless. Certainly, a requirement like "3.3.6.1 *Flight Safety*,"<sup>7</sup> cannot be one of the

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<sup>6</sup> The District Court in *Koutsoubous*, 553 F.Supp. 340, 343 (E.D. Pa. 1982), *aff'd*, 755 F.2d 352 (3rd Cir. 1985), stated"

This element of the defense calls for a comparison between the government's specifications for [the product] with the characteristics and quality of the product supplied.

<sup>7</sup> "When designed according to the environmental and structural requirements of this specification, the main landing gear assembly shall constitute no hazard to the safety of flight."

"reasonably precise specifications" necessary to the government contractor defense.

Although the Supreme Court in *Boyle*, 108 S.Ct. at 2518, ultimately rejected formulation of the defense adopted by the Eleventh Circuit in *Shaw v. Grumman Aerospace Corporation*, 778 F.2d 736 (11th Cir. 1985), *cert. denied*, 108 S.Ct. 2896 (1988), that opinion is instructive for its definition of "specifications:"

Specifications may be minimal or detailed, quantitative or qualitative, general or specific; they may range from meticulous descriptions of each bearing and bushing required, to vague hopes for "simple" or "failsafe" products. At times, several sets of specifications, sometimes conflicting, may govern a product's design all at once: *e.g.*, one "spec" requiring back-up or redundancy systems in all products, another urging ease of maintenance, a third mandating combat effectiveness, a fourth seeking cost containment, and a fifth prescribing the dimensions of a washer. Worse still, these specifications may be promulgated by several different sources, military or civilian, at different times over the life of a product.

Although we are conscious of some overlap, for purposes of our analysis we divide specifications into two type: (1) detailed, precise and typically quantitative<sup>15</sup> specifications for manufacture of a particular military product - that is to say, the design or blueprint for production; and (2) more general and more qualitative specifications, such as performance or mission criteria - that is to say, all other specs besides type one.

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15

This, of course, includes schematic and "detail" drawings and written directives as well as figures.



778 F.2d at 745.

Only the first type of specification is relevant to elements of the government contractor defense. The second type is of no use whatsoever in applying the defense for, as so aptly stated by the Eleventh Circuit:

Where the resulting product "fails" (crashes, explodes, aborts or otherwise injures someone) the design *a priori* is unlikely to meet the military's general qualitative specifications: that is, it has not in fact accomplished its mission, or performed properly, simply, or safely.

778 F.2d at 745 (footnote omitted). Thus, a claim that the design of a product contained in the precise type 1 specifications does not conform to general type 2 qualitative specifications reflects a discrepancy that does not defeat the defense.

Plaintiffs' claim here is that defendant designed, manufactured, assembled, tested and distributed the F/A-18 and that it failed to use reasonable care in the design, qualification, fabrication, assembly, inspection, testing, and evaluation of the main landing gear and component parts in testing and correcting the failure of main landing gear planing link assemblies. Further, the aircraft is alleged to have been in a defective condition, unreasonably dangerous for its intended use. The goal of the procurement specifications was to produce a product that was safe for its intended use. If, as plaintiffs allege, the ultimate design of the landing gear of the F/A-18 failed to produce a safe aircraft, a conflict exists between the alleged state law duty to design a reasonably safe product and the specifications for the main landing gear, prescribed by the government. The contractor was not, however, free to alter that design without approval from the government. When the acts charged as negligent are precisely those required by the government contract, the second element of the defense is established.

This is not to say that defendant was at liberty to ignore design problems. The third element of the government contractor defense required that any problems perceived by the contractor be communicated to the government. As stated at the outset, however, plaintiffs do not contend that there were any dangers known to defendant, but not to the government. Under these circumstances, the contractor is immune.



For the foregoing reasons, it is respectfully recommended that Defendant's Motion for Summary on the basis of the government contractor defense be granted.

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Deborah K. Chasanow  
United States Magistrate

Dated: November 23, 1988

APPENDIX D

UNITED STATES COURT OF APPEALS  
FOR THE FOURTH CIRCUIT

No. 89-2032

CAROL ANNE KLEEMAN, Individually  
and as the Executive and Personal  
Representative of the Estate of  
Henry M. Kleemann, as the Guardian  
of the minors Katherine M. Kleemann  
and Michael Andrew Kleemann; SUSAN E.  
SEIDEN; S. S. SEIDEN, JR.

Plaintiffs - Appellants

v.

McDonnell Douglas Corporation

Defendant - Appellee

No. 89-2047

CAROL ANNE KLEEMAN, Individually  
and as the Executive and Personal  
Representative of the Estate of  
Henry M. Kleemann, as the Guardian  
of the minors Katherine M. Kleemann  
and Michael Andrew Kleemann; SUSAN E.  
SEIDEN; S. S. SEIDEN, JR.

Plaintiffs - Appellees

v.

McDonnell Douglas Corporation

Defendant - Appellant

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On Petition for Rehearing with Suggestion for Rehearing In Banc

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The appellant's petition for rehearing and suggestion for rehearing in banc were submitted to this Court. As no member of

this Court or the panel requested a poll on the suggestion for rehearing in banc, and

As the panel considered the petition for rehearing and is of the opinion that it should be denied,

IT IS ORDERED that the petition for rehearing and suggestion for rehearing in banc are denied.

Entered at the direction of Judge Wilkinson with the concurrence of Judge Williams.

For the Court,

---

s/John M. Greacen  
Clerk

APPENDIX E

IN THE UNITED STATES OF DISTRICT COURT  
FOR THE DISTRICT OF MARYLAND

CAROL ANNE KLEEMANN, et al  
Plaintiffs

v. CIVIL NO. JH-87-3249

McDONNELL DOUGLAS CORPORATION  
Defendant

ORDER AND JUDGMENT

Upon consideration of the record, the Report and Recommendation of United States Magistrate Deborah K. Chasanow dated November 23, 1988, plaintiffs' objections taken thereto dated December 5, 1988, and defendant's response thereto dated December 22, 1988, it is, pursuant to Fed. R. Div. P. 72, this 30th day of December, 1988, by the United States District Court for the District of Maryland,

ORDERED AND ADJUDGED:

1. That the Magistrate's Report and Recommendation BE, and the same hereby IS, AFFIRMED and ADOPTED;
2. That the defendant's Motion for Summary Judgment BE, and the same hereby IS, GRANTED;
3. That judgment BE, and the same hereby IS, ENTERED in favor of the defendant and against the plaintiffs;
4. That the Clerk close this case; and
5. That the Clerk mail copies of the accompanying Memorandum Opinion and of this Order and Judgment to Magistrate Chasanow and all counsel of record.

---

Joseph C. Howard  
United States District Judge

## APPENDIX F

### 28 U.S.C. § 2860(a)

#### § 2680 Exceptions

The provisions of this chapter and section 1346(b) of this title shall not apply to - -

(a) Any claim based upon an act or omission of an employee of the Government, exercising due care, in the execution of a statute or regulation, whether or not such statute or regulation be valid, or based upon the exercise of performance or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the Government, whether or not the discretion involved be abused.

### U. S. CONSTITUTION ARTICLE I

Section 1. All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

#### Fed. R. Civ. P. 56(c)

##### Rule 56. Summary Judgment

(c) **Motion and Proceedings Thereon.** The motion shall be served at least 10 days before the time fixed for the hearing. The adverse party prior to the day of hearing may serve opposing affidavits. The judgment sought shall be rendered forthwith if the pleadings, depositions, answers to interrogatories, and admissions on file, together with affidavits, if any, show that there was no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law. A summary judgment, interlocutory in character, may be rendered on the issue of liability alone although there is a genuine issue as to the amount of damages.

#### Fed. R. Civ. P. 56(e)

##### Rule 56. Summary Judgment

(e) **Form of Affidavits; Further Testimony; Defense Required.** Supporting and opposing affidavits shall be made on personal knowledge, shall set forth such facts as would be admissible in evidence, and shall show affirmatively that the affiant is competent to testify to the matters stated therein. Sworn or certified copies of all papers or parts thereof referred to in an affidavit shall be

attached thereto or served therewith. The court may permit affidavits to be supplemented or opposed by depositions, answers to interrogatories, or opposed by depositions, answers to interrogatories, or further affidavits. When a motion for summary judgment is made and supported as provided in this rule, an adverse party may not rest upon the mere allegations or denials of the adverse party's pleading, but the adverse party's response, by affidavits or as otherwise provided in this rule, must set forth specific facts showing that there is a genuine issue for trial. If the adverse party does not so respond, summary judgment, if appropriate, shall be entered against the adverse party.

**U. S. CONSTITUTION AMEND. VII  
AMENDMENT VII - - CIVIL TRIALS**

In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise reexamined in any Court of the United States, than according to the rules of the common law.

## APPENDIX G

### DEPARTMENT OF THE NAVY

Naval Air Systems Command

Naval Air Systems Command Headquarters

Washington, DC 20361-2140

In Reply Refer To

13051

AIR-5116F5/CR

Ser: 3302

SEP 18 1987

From: Contracting Officer, Naval Air Systems Command

To: McDonnell Douglas Corporation, McDonnell Aircraft Company

P.O. Box 516, St. Louis, MO 63166

Via: Commanding Officer, Naval Plant Representative Officer,  
McDonnell Aircraft Company, P.O. Box 516, St. Louis, MO  
63166

Subj: CONTRACTS N00019-81-C-0157, N00019-82-C-0501,  
N00019-83-C-0272, N00019-84-C-0063, N00019-84-C-0270,  
N00019-85-C-0250, N00019-86-C-0207, N00019-83-C-0431,  
N00019-85-C-0001, N00019-85-C-0009, N00019-86-C-0323,  
N00019-84-C-0200, N00019-85-C-0002, N00019-85-C-0003,  
and N00019-85-C-0228, Model F/A-18 Aircraft, Request for  
Corrective Action, Main Landing Gear (MLG) Planing Link  
Failures.

- Ref: (a) MIL-A-8866, Aircraft strength and Rigidity  
Requirements, Repeated Loads, and Fatigue  
(b) SD-565-1-5, Detailed Specification for Model F/A-18  
Aircraft Weapons System  
(c) NAVAIR ltr AIR-5113F7/RSG Ser 3878/0673c of 16  
JAN 84  
(d) DOD-STD-480A, Configuration Control, Engineering  
Changes, Deviations and Waivers  
(e) MR-18-1-4, Project Management Specification

1. Notwithstanding the incorporation of ECP-142R2, and retrofit of IAFC-040 REV A, the F/A-18 community continues to experience MLG planing link failures. The planing links continue to fail due to the inability of the planing link and its associated locking links and devices to withstand normal landing loads. This deficiency is considered continuing non-conformance to service life requirements for the Main Landing Gear and its components as



stated in reference (a) and imposed by reference (b). Reference (c) refers to previous direction to provide corrective action for the problem.

2. In order to effect new corrective action, MCAIR is directed to prepare and submit a Class I Engineering Change Proposal (ECP) to correct the deficiency cited. Submittal shall be in accordance with reference (d) as implemented by reference (e). The ECP shall have justification code "D" with an urgent priority and include retrofit recommendations and in warranty retrofit provisions. The contractor is authorized to proceed with earliest production affectivity. The contractor is also authorized to prepare and submit a proposed urgent Interim Airframe Change (IAFC), or other ID as applicable, including total in-warranty and out-of-warranty kit requirements. MCAIR is further authorized to proceed with the procurement/manufacture/providing of in-warranty kits/material. The in-warranty period shall be that as established by ECP-00142R2.

3. The designated points of contact at NAVAIR are: Technical - LCDR Chris Ryder, AIR-5116F5, (202) 746-1173; and Contracts - Mr. William Stussie, AIR-214E, (202) 692-4835.

4. In the opinion of the PCO, the above direction should result in no change to the prices of the above-referenced contracts and authorizes no changes in contract terms of conditions except as specifically referenced above. If the contractor agrees with all of the above conditions, it is requested that acceptance be indicated by signature of an authorized corporate official in the space provided below within fifteen (15) days of the date of receipt by MCAIR of this letter. If the contractor does not agree, no action is to be taken and the PCO is to be so notified within fifteen (15) days of the date of receipt by MCAIR of this letter.

Accepted \_\_\_\_\_

D. T. MUELLER, Director

Typed Name/Title Business Management-FA-18

Date OCT 16 1987

\* As accepted In MCAIR Letter MJA-014-51216

Copy to:

COMNAVAIRLANT NORFOLK VA (522)

COMNAVAIRPAC SAN DIEGO CA (7244)

COMNAVIAIRESFOR NEW ORLEANS LA

## APPENDIX H

### Extracts From The Deposition Testimony Of David L. Bourisaw, MDC Section Chief Design, F-18 Main Landing Gear (Retired).

Q Now, with regard to the F-18 main landing gear did CPC design the gear?

A Yes.

Q Did CPC generate the loads data that the gear had to contend or copy with in service usage?

A Yes.

\*\*\*\*

Q To your knowledge did McDonnell Aircraft supply data to CPC in order for them to determine that landing loads that this gear would be subjected to in service usage?

A Yes.

Q Did you have any contact with the furnishing of that data? Any involvement with it?

A Yes.

Q Can you tell me what that, what your involvement was?

A Certainly. All modifications to the procurement specification by them went out over my signature.

\*\*\*\*

### Transcript Of Deposition Testimony Of David L. Bourisaw Of August 25, 1988, At pp. 30-31; (415-416).

\*\*\*\*

Q Now, with regard to the attachment to the status report of 3 December 1982, which refers to a sketch depicting a planing link change, and there's some data on here about it, do you know whether that change was ever formalized into a proposal?

A A similar redesign was proposed at a much later date.

Q I really want to know whether at this time, '82-'83, it ever was formalized into a proposed redesign?

\*\*\*\*

A The answer is no.

Q (By Mr. Cooper) Was there a reason or reasons it was not formalized as a design, redesign?

Mr. Winter: The record is Mr. Bourisaw doesn't know whether it was formalized.

Q (By Mr. Cooper) Let me back up a minute. Mr. Bourisaw, does your answer of no mean that you don't know whether it was proposed as a formal redesign or that you do and it was not?

A The reason given for the redesign, the slapping of that cable could not be duplicated in a subsequent test program at PAX river and which resulted in no submittal of a redesign and the proposal.

Mr. Cooper: Miss, would you mark the Status Report of 3 December 1982 as Bourisaw eight? (Plaintiff's Deposition Exhibit Bourisaw 8 marked for identification.)

\*\*\*\*\*

**Transcript Of Deposition Testimony Of David L. Bourisaw Of August 25, 1988, At pp. 48-49; (368-369).**

3 December 1982

Subject: STATUS REPORT: F-18 MLG PLANING/DRIVE LINK FAILURES (BOWING)

To: W. J. O'Brien

CC: D. L. Bourisaw, R. A. Nunn, H. I. Phillips, D. D. Snyder, C. T. Will, D. L. Williams

From: J. C. Phillips

Plaintiff's Deposition  
Exhibit 8  
Bourisaw

1. Although we have been unable to conclusively establish the cause for the bowed planing and drive links (including the F-3 instrumented flight test at PAX), the suspected cause is arresting cable impact at lift-off.

2. Attached is a sketch depicting a planing link change under consideration which replaced the internal Belleville springs (which have been trouble prone) with a dual external concentric spring package providing substantially more over-center spring force than the Bellevilles.

FORCE REQ'D TO PULL  
LOCK LINK OFF STOP  
(GEAR FULLY EXTENDED)

0 Existing System (No "Slop")	WEO/TYPE M-45"#
Bellevilles	77.6 LB P=45/5RD=8
Overcenter Spring	35.3 LB
Total	112.9 LBS
0 Existing System (w/"Slop")	
Bellevilles (.063 slop)	25.9 LB
Overcenter Spring	<u>35.3 LB</u>
Total	61.2 LBS
0 Proposed System (Never "Slop")	
External Springs	146.9 LB
Overcenter Spring	<u>35.3 LB</u>
Total	182.2 LBS

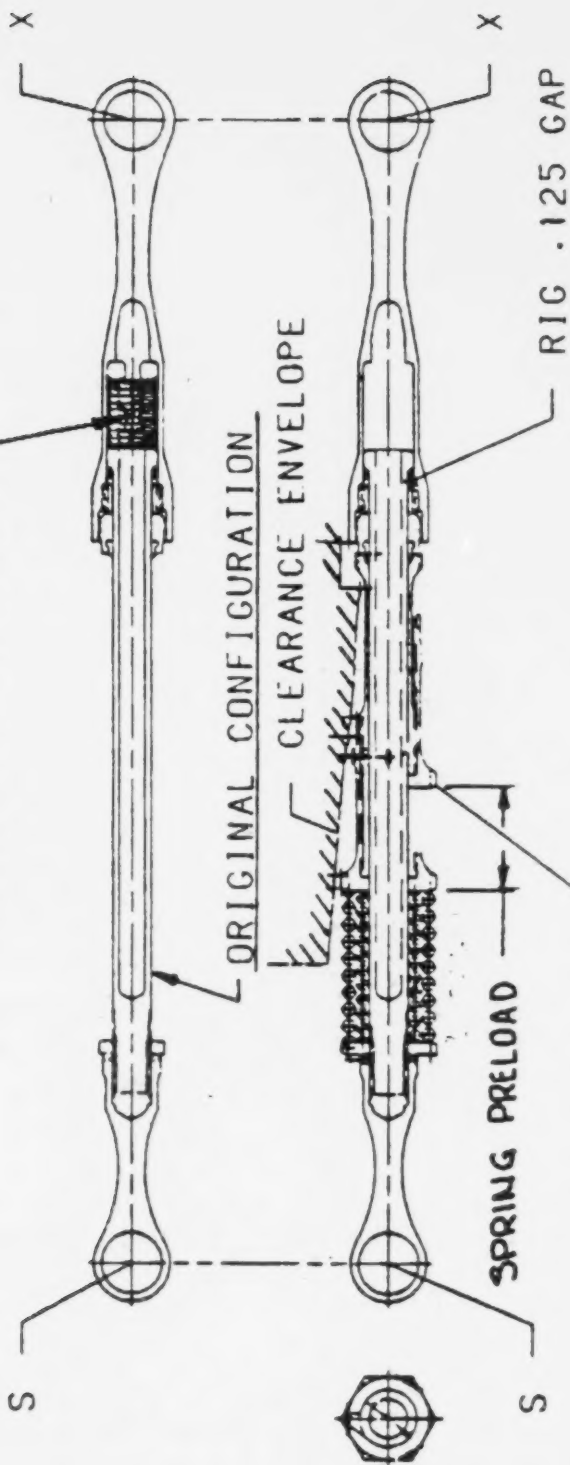
(Note: Stress now wants more force!)

3. Prototype details for the external spring package are in work for aircraft trial installation(s) (expected week of 13 Dec). The existing planing link can readily be reworked into the external spring configuration simply by removing the Belleville washers and adding the new components.
4. While there is a chance that this change may not solve the link bowing problem, the external compression springs provide a substantial lock link overcenter spring force increase and eliminates the problem Belleville springs with their inherent wear/slop sensitivity.
5. An EJS is being prepared. We may be able to sell the change as Class II if we can get around the spares situation. Updating under the Repair of Repairables Contract is not applicable. (per H. E. Schlichting).

---

J. C. Phillips

BELLEVILLE SPRINGS



000294

H-5

PROPOSED CONFIGURATION

30 DEC 82



\*\*\*\*\*

Q Mr. Cooper: Do you know, sir, of your own knowledge whether or not the United States Navy approved a reasonably precise set of specifications for the main landing gear for the F/A-18 main landing aircraft?

A I know that the precise set of drawings has been submitted to the customer for approval.

Q When you say drawings you're talking about engineering drawings?

A Yes.

Q Do those engineering drawings contain references to the various requirements for the landing gear?

A Yes.

\*\*\*\*\*

Q And do you recall whether or not these drawings contain any reference to the service life that's required of the landing gear?

A They do. We are stating engineering drawings here and I also refer to a set of procurement specifications that documented service life that were submitted to the customer along with the detail drawings.

Q So you are now telling me that document that we discussed last time which was marked for identification Palmer Exhibit Number One the Procurement Specification PS 74-410051 was likewise submitted to the Navy?

A Yes.

Q Do you know of your own knowledge whether or not that United States Navy approved that specification?

A Approval is understood if contractor, I mean, if the Government or United States Navy does not take exception in the document as submitted.

Q Are you telling me approval by acquiescence?

A Yes.

Q And if the Government or the customer, your customer, takes exception to some portion of the procurement specification or engineering drawings or any associated materials then that is a rejection?

A They would reject the drawing and we would have to revise the drawings.

Q Or the procurement specification, or whatever we're talking about?

A Yes.

**Transcript Of Deposition Testimony Of David L. Bourisaw Of August 31, 1988, at pp. 48-50; (534-535).**

## APPENDIX I

### Extracts From The Deposition Testimony Of Robert W. Palmer, MDC's Present United Chief-of-Design F-18 Landing Gear Group.

Q During the course of your work here at McDonnell Douglas, have you ever had occasion to prepare what is known at a procurement specification?

A Yes.

Q I have been furnished a copy of the procurement specification for the F-18 main landing gear which reflects on its face page that it was prepared by Robert W. Palmer. I presume you're that individual?

A Yes.

Q Now, this thing carries a date of 1976, and that would seem to fall within the period as to when you were working on the F-18 program for approximately five years?

A Yes.

Q. Tell me during that five year period when you were on the F-18 program what your job title or titles were.

A Engineer, Design, and then toward the latter part I was promoted to Senior Engineer.

Q Before you prepared procurement specification 74-410051, had you worked on any similar document in the past?

A No.

\*\*\*\*

Q (By Mr. Cooper) Let me show you a copy of the document that I have been furnished by McDonnell Douglas, and it is report number PS 74-410051 entitled Procurement Specification For F-18 Main Landing Gear Assembly and carries an issue date of 27 March '76, and it has a revision date of 3 September '76. You just take as long as you need to.

\*\*\*\*

Q . . . Did you prepare that document?

A Yes.

Q Now, do you recall who assigned you that task?

A David Bourisaw.

\*\*\*\*

Q Was he the man that gave you your work?

A Yes.

\*\*\*\*

- Q Were you given any guidance or direction or form to follow?  
I'm really trying to get a feel for how this was done.
- A Primarily all the procurement specs are begun with what they call a boiler plate which gives a general outline as to what should be contained in the spec, the order in which those items appear, and based on that, that forms the outline for the spec. And then respective groups give inputs for their specific areas.

\*\*\*\*

- Q Now, where did you get the requirements for the gear, the specific requirements that you included in the procurement specification?
- A They were derived by the various groups that supplied me information. In other words, the loads people would supply loading information, the stress people, stress information, and those are based upon the total aircraft performance specifications.

\*\*\*\*

- Q Okay. Where did you get the information as to which military spec would apply to which paragraph in the spec?
- A That was based on the boiler plate in some cases, and in other cases it was based upon prior procurement specs on previous airplane designs. And in other cases, based upon what I had as input from other groups in the design of the F-18.
- Q At the time that you were doing this work, had the detailed specification for the F-18 been finalized with the Navy?
- A I don't know.
- Q Do you know whether or not any of the people who were supplying you data and requirements were getting it from the detailed specification applicable to the F-18?
- A Some of it was, and the detailed spec does call out portions of some of these military specifications. In fact, the landing gear section does refer to certain military specifications which apply.

\*\*\*\*

- Q Now, thereafter did you have other work in this five year period that we've been talking about when you were an engineer-design and an engineer in the F-18 Program related to the F-18 landing gear?
- A Was there other work besides the procurement specification?
- Q Were you involved in other work?
- A Yes.
- Q And could you tell me generally, sir, what that involved?

A It involved receiving and reviewing vender information or in this case the Cleveland Pneumatics information that was sent in; also information from other suppliers, I was involved with doing some drawings, installation type drawings of the gear and operational details. Primarily the work was wheels, tires and brakes.

\*\*\*\*

Q To your knowledge, did CPC design the entire main landing gear including this mechanism? [the planing link]

A Yes.

Q Okay. Now, at the time they submitted their design and their verification data, was the amount of tension and compression that the gear would be exposed to during retraction and extension set out?

Mr. Winter: In some document?

Q (By Mr. Cooper) In some document, year. Did they say this is what's going to happen?

A I can't answer for firsthand information.

\*\*\*\*

The Witness: Maybe I misunderstood your question. The spec did not deal with planing link loads because that is not part of the spec. It deals with the general landing gear loads.

\*\*\*\*

Q Do you have any information or knowledge as to whether or not CPC ever submitted verification data or test data or similar material that purported to show McDonnelle Douglas how much tension and how much compression forces would be exerted on this gear through this planing mechanism when the gear was extended or retracted?

A I can't answer that.

Q So your answer is you do not know whether or not CPC ever validated its design of this landing gear planing link mechanism in terms of the amount of tension and compression forces that would be exerted on the gear during retraction and extension?

A Yeah. I can't remember the exact information that was supplied. They supplied general information on the gear, but the details of that I can't recall.

**Transcript Of Deposition Testimony Of Robert W. Palmer Of August 18, 1988, At pp. 8-12, 17, 18, 35-37; (423, 640-645; 653; 655).**

## APPENDIX J

### Extracts From The Deposition Testimony Of Dennis Gendreau, MDC Section Chief, Structural And Mechanical Design, Full Time Member Of The F-18 Landing Gear Autonomous Investigating Team.

Q What do you consider to be a quantitative requirement?

A Numbers applying to load, combination of loads, cycling, fatigue spectra, reliability goals.

Q And where did you find those requirements?

A I believe most of those will be found in the procurement spec.

\*\*\*\*

Q Tell me what the . . . significance to you is of the fact that the autonomous team was using the more recent data?

\*\*\*\*

A Well, our charter as an autonomous investigation team was to do everything possible to root out the cause of the problem.

Q (By Mr. Cooper) And to do that, you used the most up-to-date information you had, right?

A And different techniques, yes.

Q And with the use of up-to-date information and different techniques, the team identified what it thought to be some conditions which might be causing these lock links to unlock and/or these planing links to buckle; is that fair?

\*\*\*\*

A Yes.

\*\*\*\*

Q Was there any work done to try to figure out how the load gets from where it was supposed to be inducted into; namely, the lever, up into this planing link?

\*\*\*\*

A The work of the team.

Q (By Mr. Cooper) The autonomous team?

A Yeah, right.

Transcript Of Deposition Testimony Of Dennis Gendreau Of  
November 15, 1988, At pp. 43-44, 52-53 & 64-65; (335; 313-315).

## APPENDIX K

### **Extracts From The Deposition Testimony Of Glen Kirkland, Branch Chief-Design At MDC And Head Of The F-18 Landing Gear Autonomous Investigating Team**

Q Mr. Kirkland, in that regard were the deflections that you all came up with during the Tiger Team work for conditions 101 through 105 defined in the procurement spec and other specification requirements, the overall conditions?

A Yes they were.

Q Now if your work, your team's work, in analyzing this, was correct and that the amount of deflection generated by one or more of these five defined conditions was, in fact, what was causing the planing link mechanism to unlock and planing links to be bent, would that have been a violation of the procurement specification paragraph that I just had reference to?

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A If the analysis that we did should turn out to be exactly correct, then they would be in violation, yes.

\*\*\*\*

Q Is there any requirements that landing gear not permanently deform as a result of a single load application during landing within the design envelope?

A Yes I'm sure there is a requirement. I'm not sure what paragraph it's in.

**Transcript Of Deposition Testimony Of Glen Kirkland Of August  
31, 1988, At pp. 72 & 79; (394, 537).**

